ABSTRACTS

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Numbers 2197–2261

Social development

2197. Production Sharing in East Asia: Who Does What for Whom, and Why?

Francis Ng and Alexander Yeats
(October 1999)

Components have been a dynamic leading sector in East Asian imports and exports. East Asian global exports of parts and components totaled $178 billion in 1996; imports, $12 billion less. Components now account for a fifth of East Asian exports of manufactures.

Ng and Yeats analyze empirical information on the nature and magnitude of, and motivation for, international production sharing in East Asia. To do so, they use a largely untapped source of data on inter- and intraregional trade in parts and components. Some of their findings:

- East Asian trade in components is considerably greater than often recognized. Regional global exports of parts and components totaled $178 billion in 1996, and imports of those products about $12 billion less. Components now constitute one-fifth of East Asian exports of manufactures.
- Imports of components, measured as a share of all manufactures, are growing considerably faster in East Asia than in OECD Europe or North America. The value of East Asian global imports of components rose more than ninefold over the period 1985–96. Almost three-quarters of all East Asian imports of telecommunications equipment are components for further assembly.
- East Asian global exports of components grew faster than any other major product group over 1984–96, when their exchange increased 15 percent a year (compared with 11 percent for all products). Although Japanese exports declined slightly in 1997, shipments from most other East Asian countries increased 9 to 16 percent.

Why did production sharing expand?

Analyses of traditionally revealed comparative advantage use export statistics to determine whether a country has a comparative advantage in the *production* of a good. The same indices, calculated using import statistics for components, can show whether a country has a comparative advantage in the *assembly* of a product. Using statistics on component imports, Ng and Yeats find that

- Japan, Singapore, and Taiwan (China) — which are exiting most assembly operations — increased their specialization in the manufacture of components. Assembly operations, which are labor-intensive, tend to migrate to low-wage East Asian countries.
- Indonesia, Malaysia, and Thailand have the broadest and most mature assembly capacity for components. But no East Asian country has developed its domestic assembly operations as much as Mexico, which has a comparative advantage in 70 percent of all component groups.
- Collectively, East Asian countries are strengthening their comparative advantage in the production of components; the results are mixed for assembly operations.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to improve the growth prospects of developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at fng@worldbank.org or ayeats@worldbank.org. (57 pages)

2198. How the Chinese System of Charges and Subsidies Affects Pollution Control Efforts by China's Top Industrial Polluters

Hua Wang and Ming Chen
(October 1999)

China's unique combination of emissions charges and pollution abatement subsidies has given China's most heavily polluting industrial firms incentive to invest in pollution abatement.

There have been extensive theoretical studies of firms' responses to environmental regulations and enforcement but few empirical analyses of firms' expenditures on pollution abatement in response to different regulations and enforcement strategies.

Wang and Chen empirically analyze the pollution abatement efforts of Chinese industrial firms under a system combining pollution charges and abatement subsidies.

Using data on China's top industrial polluters and on regional development in China, they find that the combination of charges and subsidies used in China has provided effective incentives for the most heavily polluting industrial firms to abate pollution.

Chinese industries operate under a unique pollution control system, a market-based instrument combining emissions charges and abatement subsidies. This combination of charges and subsidies has given firms incentive to invest in wastewater treatment facilities. The pollution levy, although low, has significantly improved investments in abatement.

Wang and Chen found that the more pollution a firm generates, the more likely it is to invest in pollution abatement.

This study was only of top polluters, which are closely monitored by environmental agencies, so the results may not be valid for other sources of industrial pollution.

This paper — a product of Infrastructure and Environment, Development Research Group — is part of a larger effort in the group to identify appropriate policies for environmental regulation in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hua Wang, room MC2-626, telephone 202-473-3255, fax 202-522-3230, Internet address hwang1@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. (28 pages)

2199. Managing Risks of Capital Mobility

Mansoor Dailami
(October 1999)

Countries need suitable mechanisms for balancing the risks and benefits of financial openness, including mechanisms through which to provide insurance to citizens — through the marketplace or through redistributive policy — and thus to avert political pressure for capital controls. Capital mobility as a policy objective gained currency and support only after significant trade liberalization and only in democratic countries that had established the ability to respond to citizens' demands for national economic security.

Inherent in pursuing openness to international capital flows is an awareness that it brings both benefits and risks. Much of the current debate is about how best to balance them.

Major benefits for developing countries include access to a broader menu of investment sources, options, and instruments, as well as enhanced efficiency of domestic financial institutions and the discipline of capital markets in conducting domestic macroeconomic policy. By easing financing constraints, the greater availability of international finance can extend the period for implementing needed adjustments.

From the perspective of emerging market economies, Dailami highlights two sources of risk:

• The host governments' policy of liberalizing capital controls before having established the macroeconomic, regulatory, and institutional foundations required for capital account openness.

• A shift in foreign lenders' and investors' sentiments and confidence, not necessarily related to a particular country's long-term creditworthiness.

Risk management demands judicious strategies for both corporate and financial institutions and national policy. At the institutional level, with the advances in technology and communications, financial risk management practice has improved significantly in recent years through the use of statistical models, such as value at risk, computer simulation, and stress testing.

At the national level, with the worldwide trend toward democracy, Dailami argues that managing the risks of financial openness will require developing national mechanisms through which to provide insurance to citizens — through the marketplace or through redistributive policy — and thus to avert political pressure for capital controls.

To succeed, open democratic societies have to balance the threat of capital exit, made easier by the opening of capital markets, with the political voice of citizens—demanding protection through redistribution, social safety nets, and other insurance-like measures. These insurance mechanisms have been critical in easing the tension between politics and financial openness in OECD countries. Indeed, cross-country empirical analysis confirms that countries that spend a large share of their GDP on social needs (education, health, and transfer payments) are more open to free international capital flows and also score high on measures of political and civil liberty.

This paper — a product of Governance, Regulation, and Finance, World Bank Institute — is part of a larger study, "The Challenge of Development in the 21st Century" (RPO 683-14). Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact William Nedrow, room G2-072, telephone 202-473-1585, fax 202-334-8350, Internet address wnedrow @worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at mdailami@worldbank.org. (30 pages)

2200. The Role of Trust in Financial Sector Development

Biagio Bossone
(October 1999)

How does incomplete trust shape the transaction costs in trading assets? And how does it affect resource allocation and pricing decisions from rational, forward-looking agents?

In any economic environment where decisions are decentralized, agents consider the risk that others might unfairly exploit informational asymmetries to their own disadvantage.

Incomplete trust, especially, lies at the heart of financial transactions in which agents trade current real claims for promises of future real claims. Agents thus need to invest considerable resources to assess the trustworthiness of others with whom they know they can interact only under conditions of limited and asymmetrically distributed information.

Thinking of finance as the complex of institutions and instruments needed to reduce the cost of trading promises among anonymous individuals who do not fully trust each other, Bossone analyzes how incomplete trust shapes the transaction costs in trading assets, and how it affects resource allocation and pricing decisions from rational, forward-looking agents.

His analysis leads to core propositions about the role of finance and financial efficiency in economic development.

He recommends areas of financial sector reform in emerging economies aimed at improving the financial system's efficiency in dealing with incomplete trust. Among other things, the public sector can improve trust in finance by improving financial infrastructure, including legal systems, financial regulation, and security in payment and trading systems.

But fundamental improvements in financial efficiency may best be gained by eliciting good conduct through market forces.

This paper — a product of the Financial Economics Unit, Financial Sector Practice Department — is part of a larger effort in the department to study the links between financial sector and economic development and improve financial sector policy reforms. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Elena Mekhova, room MC9-622, telephone 202-458-5984, fax 202-522-2031, Internet address emekhova @worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at bbossone@worldbank.org. (34 pages)

2201. Financial Development and Industrial Capital Accumulation

Biagio Bossone
(October 1999)

There may be a compelling discontinuity to financial sector development in that banks need to be supported early in development but need to be "weakened" later — at the expense of bank rents — to foster further development. The important question for policy is when and how to generate and manage this discontinuity so that it is not forced on society by costly and traumatic events such as bank failures.

In an economy where decisions are decentralized and made under conditions of uncertainty, the financial system can be seen as the complex of institutions, infrastructure, and instruments that society adopts to minimize the costs of trading promises when agents have incomplete trust and limited information.

Building on a microeconomic general equilibrium model that portrays such fundamental financial functions, Bossone shows that, in line with recent empirical evidence, the development of financial infrastructure stimulates greater and more efficient capital accumulation.

He also shows that economies with more developed financial infrastructure can more easily absorb exogenous shocks to output.

The results call for addressing a crucial issue in the sequencing of reform in the financial sector: early in development, banks provide essential financial infrastructure services as part of their exclusive relationships with borrowers. Further economic development requires that such services be provided extrinsically to the bank-borrower relationship, clearly at the expense of bank rents.

There may be a compelling discontinuity to financial sector development in that banks need to be supported early in development but to be "weakened" later — at the expense of bank rents — to foster further development. The important question for policy is when and how to generate and manage this discontinuity so that it is not forced on society by costly and traumatic events such as bank failures.

This paper — a product of the Financial Economics Unit, Financial Sector Practice Department — is part of a larger effort in the department to study the links between financial sector and economic development and improve financial sector reform policies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Elena Mekhova, room MC7-622, telephone 202-458-5984, fax 202-522-2031, Internet address emekhova@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at bbossone@worldbank.org. (25 pages)

2202. Specialization without Regret: Transfer Rights, Agricultural Productivity, and Investment in an Industrializing Economy

Michael R. Carter and Yang Yao
(October 1999)

In China, where collectives own farmland but farmers may hold "use rights" to the land, a case can be made for a property rights system with incomplete security of tenure but with strong transfer rights, which permit "specialization without regret" — so farmers can recoup the value of an investment even if they exit farming.

A number of studies have examined the effects of secure tenure on agricultural investment and productivity. Carter and Yao also study the importance of rights to household residual income and land use being transferable.

Contemporary China — where industrialization has spread rapidly, if unevenly — is a good place to study the economic effects of transfer rights as well as conventional security of tenure. Village collectives formally own land in China, so there can be no individual land sales, but farmers are sometimes entitled to sell their rights to use the land allocated to them under the household responsibility system.

Whether a household has secure tenure depends on whether its landholding will be reduced if the household population declines, whether the landholding will be increased if the household population increases, and how frequent average land adjustments are under the household responsibility system.

Analyzing panel data for a sample of farm households, Carter and Yao study the "investment regret mitigation effect," which results when greater transfer rights make households more willing to invest because they are less likely to regret such investments when they can recoup the investment value even if they exit farming.

Carter and Yao find that transfer rights may be especially important in an industrializing economy. A property rights system with incomplete security of tenure but with strong transfer rights that permit "specialization without regret" — so farmers can recoup the value of an investment even if they exit farming — may have much to recommend it.

This paper — a product of Rural Development, Development Research Group — is part of a larger effort in the group to study the determinants and impact of property rights systems and land tenure regimes in the process of development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Maria Fernandez, room MC3-542, telephone 202-473-3766, fax 202-522-1151, Internet address mfernandez2@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at carter@aae.wisc.edu or yyao@ccer.pku.edu.cn. (50 pages)

2203. Market versus Administrative Reallocation of Agricultural Land in a Period of Rapid Industrialization

Michael R. Carter and Yang Yao
(October 1999)

Property rights in China are moving in two different directions. In some villages, private rights are secure and to some degree marketable; in other villages, individual rights are increasingly restricted and subject to more regulation and reallocation. Administrative reallocation tends to promote more equal access to land, but the price paid for the social insurance of land tenure may be forgone investment.

Under communal farm production, there was little incentive to work hard: the communal system guaranteed a livelihood, and there were few private gains from additional efforts. The reform that introduced the household responsibility system in China in the early 1980s sharpened individual work incentives by assigning specific plots and the rights to residual income to individual households.

However, the household responsibility system left unresolved questions about the reallocation of land over time — questions that have become increasingly important (for both efficiency and equity) with the rapid growth of the nonfarm economy.

Carter and Yao use household and village data to show that the initially egalitarian distribution of land is becoming more dispersed over time.

In what has become a hybrid property rights system, in some areas local village leaders (the cadre) were empowered to periodically redistribute land between households on the basis of economic and demographic changes among households. In other villages, households were granted much greater immunity against redistribution of any sort.

Similarly, villages differed in the degree to which individual households could trade land among themselves. Some villages did not regulate the practice, and others required village approval or prohibited land rental relationships.

Carter and Yao use simulated maximum likelihood methods to estimate hybrid panel models of the determinants of both market-based and administrative reallocation of land. They also use them to estimate the insecurity-induced investment costs of market-based reallocation of land.

They find that administrative reallocation responds to the increasing inequality but nonmarket reallocations come at a significant cost in forgone investment.

This paper — a product of Rural Development, Development Research Group — is part of a larger effort in the group to study the determinants and impact of property rights systems and land tenure regimes in the process of development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Maria Fernandez, room MC3-542, telephone 202-473-3766, fax 202-522-1151, Internet address mfernandez2@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at carter@aae.wisc.edu or yyao@ccer.pku.edu.cn. (35 pages)

2204. Corruption under Moral Hazard

Gunnar S. Eskeland and Henrik Thiele
(October 1999)

Some corruption of employees will exist when managers are constrained in setting rewards and penalties. Attempts to reduce corruption need to address these constraints. Raising salaries without raising expected penalties will have higher costs than benefits.

In this theoretical analysis, the "principal" can be the head of the tax collection agency (or "government" or even citizens), the "supervisor" can be the tax collector, and the "agent" can be the taxpayer.

The principal, interested in controlling an agent's socially costly activity ("cheating"), hires the supervisor to save on monitoring costs. The agent may bribe the tax collector to suppress reporting, but bribery can be eliminated by the agency head if he institutes enough investigations and sets rewards high enough and penalties steep enough. When penalties and rewards are constrained, some corruption will exist even under a rational approach to pursuing the agency's objectives. Anticorruption efforts will have higher costs than benefits unless they successfully address these constraints.

The agency's implementation costs, and thus the scope for corruption, are defined by constraints on penalties and rewards relative to costs of monitoring and investigation. For example, if the agency head is extremely handicapped in his ability to detect bribery (by a high burden of proof and cost of investigation, and a civil service pay scale that is too flat and rigid), he cannot really reward good employees or make dishonest employees suffer.

The analysis assumes that the principal can commit in advance to a certain likelihood of being caught engaging in bribery. Creating an independent anticorruption commission (like those in Hong Kong and New South Wales) may be interpreted as a way of making such a commitment. In Hong Kong two-thirds of reports to the commission are made in full name, an indication that it has attained a reputation for independence and efficiency. The "whistleblower act" in the United States (promising rewards and protection for informants), as well as separation of powers and independent courts, also function as commitment.

Corruption exists not only in poorly designed but also in sophisticated systems. It can profitably be reduced only by improving general incentives. Advances in courts, investigations, freedom of the press, and flow of information can allow more performance-based rewards and penalties.

This paper — a product of Public Economics, Development Research Group — is part of a larger effort in the group to study accountability and the organization of government. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, Internet address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. Gunnar Eskeland may be contacted at geskeland@worldbank.org. (39 pages)

2205. Foreign-Owned Capital and Endogenous Tariffs

Marcelo Olarreaga
(October 1999)

The increase in investment abroad during the past two decades may help explain the simultaneous worldwide rush toward free trade. The entry of foreign capital may change the political game, increasing openness to international trade no matter what form the foreign capital takes (whether entering by acquiring equity in existing domestic firms or by bringing foreign firms into the host economy) or what its trade orientation (whether it enters the export or import-competing sector).

During the past two decades there has been an important increase in investment abroad and a worldwide rush toward free trade. Olarreaga argues that the increase in investment abroad may partially explain the worldwide rush toward free trade.

In a model of endogenous determination of trade protection through lobbying — where the government is also concerned about income redistribution among owners of foreign and national factors of production — foreign capital's entry into a host country will probably reduce the endogenous level of protection.

If the elasticity of substitution between labor and capital is small enough, Olarreaga shows, protection cannot increase after the entry of foreign capital, regardless of the form of investment abroad (whether through the acquisition of existing domestic firms or the entry of foreign firms) or its trade orientation (whether foreign capital enters the export or import-competing sectors).

There will either be increased counterlobbying for protection by the export sector or reduced lobbying for protection in the import-competing sector, because of the scale effect associated with an increase in the equilibrium wage.

If foreign entry occurs in the import-competing sector, protection might increase because of the scale effect, but under reasonable assumptions about the value of the elasticity of substitution between labor and capital, protection will also fall.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to understand the political economy of trade protection. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at molarreaga@worldbank.org. (21 pages)

2206. Household Childcare Choices and Women's Work Behavior in Russia

Michael M. Lokshin
(October 1999)

Replacing family allowances with childcare subsidies in Russia might have a strong positive effect on women's participation in the labor force and thus could be effective in reducing poverty.

Lokshin models mothers' participation in the labor force, their working hours, and household demand for childcare in Russia. The model estimates the effects of the price of childcare, mothers' wages, and household income on household behavior and well-being.

The theoretical model yields several predictions. To test these, reduced-form equations of the discrete and continuous household choices are estimated jointly using the method of semi-parametric full information maximum likelihood. This method controls for the correlation of error terms across outcomes, and the correlation of error terms that can result when panel data are used.

The results of this analysis indicate that the extent to which mothers participate in the labor force, and for how many hours, depends on the costs of childcare and on what level of hourly wage is available to them and to other members of the household.

Lokshin's simulations show that family allowances — intended to reduce poverty — do not significantly affect the household choice of childcare arrangements.

Replacing family allowances with childcare subsidies might have a strong positive effect on women's participation in the labor force and thus could be effective in reducing poverty.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to understand the role of gender in the context of the household, institutions, and society. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-632, telephone 202-473-3902, fax 202-522-1153, Internet address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at mlokshin@worldbank.org. (35 pages)

2207. Jamaica's Food Stamp Program: Impacts on Poverty and Welfare

Kene Ezemenari and Kalanidhi Subbarao
(October 1999)

Without the food stamp program, the poverty gap in Jamaica would have been much worse during the early 1990s, when the Jamaican dollar was being devalued. Households with elderly members and young children benefited most from the program.

Ezemenari and Subbarao examine how the food stamp program affected measures of poverty during devaluation of the Jamaican dollar in the early 1990s.

They find that without the food stamp program, the poverty gap in Jamaica would have been much worse, especially in 1990 and 1991.

For the country as a whole, not having a food stamp program wouldn't have affected the incidence of poverty significantly, but particular groups among the poor would have fared worse.

Households with elderly residents benefited most from the program. Households with young children benefited more than households without, in terms of the poverty headcount and gap.

The program also appears to have had more effect on extremely poor households than on those of the transient poor (people who move in and out of poverty).

Explicitly incorporating behavioral responses into the model reduces the contribution of food stamps to household consumption and poverty, but the poorest benefited most from the program even after accounting for behavioral responses. The program contributed more to reducing poverty than to smoothing consumption.

This paper — a product of the Poverty Division, Poverty Reduction and Economic Management Network — was presented at the World Bank Institute workshop "Evaluating the Impact of Development Interventions: Concepts, Methods and Cases," December 9–10, 1998. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Gloria Peralta, room MC3-787, telephone 202-473-7405, fax 202-522-3283, Internet address gperalta@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at kezemenari@worldbank.org or ksubbarao@worldbank.org. (36 pages)

2208. Ethnic Partition as a Solution to Ethnic War: An Empirical Critique of the Theoretical Literature

Nicholas Sambanis
(October 1999)

Partition theorists argue that when violent ethnic conflict is intense, civil politics cannot be restored unless ethnic groups are demographically separated into defensible enclaves. The empirical evidence suggests otherwise.

Some theorists of ethnic conflict argue that the physical separation of warring ethnic groups may be the only possible solution to civil war. Without territorial partition and (if needed) forced population movements, they argue, ethnic war cannot end and genocide is likely.

Other scholars have counterargued that partition only replaces internal war with international war, creates undemocratic successor states, and generates tremendous human suffering.

So far this debate has been informed by few important case studies.

Sambanis uses a new set of data on civil wars to identify the main determinants of ethnic partitions and to estimate their impact on the probability of war's recurrence, on low-grade ethnic violence, and on the political institutions of successor states.

Sambanis's analysis is the first large-sample quantitative analysis of the subject, testing the propositions of partition theory and weighing heavily on the side of its critics.

He shows that almost all the assertions of partition theorists fail to pass rigorous empirical tests.

He finds that, on average, partition does not significantly reduce the probability of new violence. A better strategy might be to combine ethnic groups, but most important is to establish credible and equitable systems of governance.

It is also important not to load the strategy with subjective premises about the necessity of ethnically pure states and about the futility of interethnic cooperation.

This paper — a product of Public Economics, Development Research Group — is part of a larger effort in the group to study the economics of civil wars. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, Internet address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at nsambanis@worldbank.org. October 1999. (35 pages)

2209. Does Corruption Relieve Foreign Investors of the Burden of Taxes and Capital Controls?

Shang-Jin Wei
(October 1999)

Other things being equal, countries with higher tax rates, more corruption, or more restrictions on capital account transactions attract less foreign investment. Taxes and capital controls hinder foreign investment, and bureaucratic corruption adds to those burdens rather than reducing them.

In a sample of 14 source countries making bilateral investments in 45 host countries, Wei finds that taxes, capital controls, and corruption all have large, statistically significant negative effects on foreign investment.

Moreover, there is no robust support in the data for the "efficient grease" hypothesis — that corruption helps attract foreign investment by reducing firms' tax burden and the irritant of capital controls.

This paper — a product of Public Economics, Development Research Group — is part of a larger effort in the group to study effective anticorruption strategies. It will appear as a chapter in a book on taxation and foreign direct investment edited by James Hines Jr. and to be published by the University of Chicago Press for the National Bureau of Economic Research. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, Internet address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at swei@worldbank.org. October 1999. (13 pages)

2210. The Slippery Slope: Explaining the Increase in Extreme Poverty in Urban Brazil, 1976–96

Francisco H. G. Ferreira
and Ricardo Paes de Barros
(October 1999)

During the turbulent years 1976–96, aggregate data for Brazil appear to show only small changes in mean income, inequality, and incidence of poverty — suggesting little change in the distribution of income. But a small group of urban households — excluded from formal labor markets and safety nets — was trapped in indigence. Based on welfare measured in terms of income alone, the poorest part of urban Brazil has experienced two lost decades.

Despite tremendous macroeconomic instability in Brazil, the country's distributions of urban income in 1976 and 1996 appear, at first glance, deceptively similar. Mean household income per capita was stagnant, with minute accumulated growth (4.3 percent) over the two decades. The Gini coefficient hovered just above 0.59 in both years, and the incidence of poverty (relative to a poverty line of R$60 a month in 1996 prices) remained effectively unchanged over the period, at 22 percent.

Behind this apparent stability, however, a powerful combination of labor market, demographic, and educational dynamics was at work, one effect of which was to generate a substantial increase in extreme urban poverty.

Using a decomposition methodology based on microsimulation, which endogenizes labor incomes, individual occupational choices, and decisions about education, Ferreira and de Barros show that the distribution of income was being affected by:

- Three factors that tended to increase poverty — a decline in average returns to education and experience, a negative "growth" effect, and unfortunate changes in the structure of occupations and participation in the labor force.
- Two factors that tended to reduce poverty — improved educational endowments across the board, and a progressive reduction in dependency ratios.

The net effect was small and negative for measured inequality overall, and negligible for the incidence of poverty (relative to "high" poverty lines).

But the net effect was to substantially increase extreme poverty — suggesting the creation of a group of urban households excluded from any labor market and trapped in indigence.

Above the 15th percentile, urban Brazilians have "stayed put" only by climbing hard up a slippery slope. Counteracting falling returns in both self-employment and the labor market required substantially reduced fertility rates and an average of two extra years of schooling (which still left them undereducated for that income level).

This paper — a product of the Poverty Division, Poverty Reduction and Economic Management Network — is part of a larger effort in the network to understand the determinants of urban poverty. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Grace Ilogon, room MC4-552, telephone 202-473-3732, fax 202-522-3283, Internet address gilogon@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. Francisco Ferreira may be contacted at fferreira@econ.puc-rio.br. (71 pages)

2211. Competition Policy, Developing Countries, and the World Trade Organization

Bernard Hoekman and Peter Holmes
(October 1999)

Developing countries have a great interest in pursuing active domestic competition policy but should do so independent of the World Trade Organization — which they should use to improve market access through further reduction in direct barriers to trade in goods and services.

Hoekman and Holmes discuss developing country interests in including competition law disciplines in the World Trade Organization (WTO).

Developing countries have a great interest in pursuing active domestic competition policy, they conclude, but should do so independent of the WTO.

Given the mercantilist basis of multilateral trade negotiations, the WTO is less likely to be a powerful instrument for encouraging adoption of welfare-enhancing competition rules than it is to be a forum for abolishing cross-border measures.

Developing countries should therefore give priority to using the WTO to improve market access — to further reduce direct barriers to trade in goods and services.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to analyze issues that may be the subject of WTO negotiations. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at bhoekman@worldbank.org or p.holmes@sussex.ac.uk. (25 pages)

2212. Is African Manufacturing Skill-Constrained?

Howard Pack and Christina Paxson
(October 1999)

Continued efforts to develop high-level industrial skills in Sub-Saharan African countries may be wasteful without a more competitive environment in the industrial sector. But lack of such skills may limit the benefits to the industrial sector from future liberalization. As a result, the supply response to improved incentives may be weak.

Total factor productivity has been low in most of Sub-Saharan Africa. It is often said that the binding constraint on African industrial development is the inadequate supply of technologically capable workers. And many cross-country studies imply that the low level of human capital in Africa is an important source of low growth in per capita income.

The results of Pack and Paxson's study do not necessarily conflict with this view. They indicate that in noncompetitive industrial sectors with little inflow of new technology, the contribution of technological abilities, however it is measured, is limited.

If liberalization of the economy generated greater competition, or if export growth were accelerated — permitting the import of inputs embodying new technology — local skills could contribute significantly more in raising output.

The experience of other countries also suggests that as the economy opens to flows of international knowledge — whether through technology transfers or through informal transfers from purchasers of exports — the technological capacity of local industry becomes important.

The policy implications of this analysis are clear: Without the prospect of a more competitive environment, continued efforts to develop high-level industrial skills may be wasteful. But the absence of such skills may limit the benefits to the industrial sector from future liberalization, as a result of which the supply response to improved incentives may be weak.

This paper — a product of Public Economics, Development Research Group — is part of a larger effort in the group to analyze the effect of public policies on industrial productivity. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, Internet address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at packh@wharton.upenn.edu or cpaxson@wws.princeton.edu. (19 pages)

2213. Fiscal Solvency and Sustainability in Economic Management

Hinh T. Dinh
(October 1999)

In a financially integrated world, it is misleading to assess fiscal performance separate from other aspects of economic development. The framework proposed here can help assess fiscal performance over time and across countries and point to a pace of fiscal adjustment consistent with a country's economic and social objectives.

Fiscal policy is central to a country's economic and social objectives, from macroeconomic stability to sustainable growth and poverty reduction. But evaluations of a country's fiscal performance, over time or relative to other countries, are often conducted independent of other development objectives, disregarding the links between fiscal, monetary, and exchange rate policies.

A budget deficit of 4 percent of GDP, for example, may be acceptable in one country but not in another, because of different initial conditions and policy priorities. In the same country, a level of fiscal deficit may be acceptable one year but not the next, depending on developments and changes in policy objectives.

Dinh argues for assessing fiscal performance (1) as part of the entire framework of economic policy, (2) against a policy objective, (3) by taking into account both short- and long-term considerations, and (4) with an eye to the quality of adjustment (whether there are income inequalities or other social issues, for example) as well as its magnitude.

The approach he proposes for assessing country fiscal performance requires a minimum of data and takes into account flow and stock variables on internal and external debt. The approach addresses the shortcomings of conventional analysis by incorporating the debt dynamics and other macroeconomic targets of growth, inflation, and external and internal debt. While its theoretical foundation is well known in the literature, this approach has not been adapted for assessing fiscal performance either over time or across countries, and he discusses practical issues arising from this adaptation. Dinh proposes two indicators to measure fiscal adjustment efforts:

- Fiscal solvency adjustment, which measures how far additional fiscal efforts must be taken to restore solvency to the fiscal sector.
- Fiscal sustainability adjustment, which measures how far additional fiscal efforts must be taken to maintain the ratios of internal and external debt to output.

Dinh applies the proposed framework to evaluate recent fiscal performance in three countries — Argentina, India, and Zambia — each with a different income level and located on a different continent. The countries were selected on the basis of recent World Bank economic work using the proposed approach or an equivalent. Dinh finds the proposed approach useful for identifying key fiscal issues, for assessing the adequacy and pace of fiscal adjustment consistent with the overall economic and social objectives, and for highlighting the tradeoffs between policy initiatives.

Sound fiscal policy is crucial for macroeconomic stability. When fiscal issues are under control, it is easier to coordinate other policies. When fiscal issues are part of the problem, the tradeoffs between policy outcomes become pronounced, and economic management, including the management of capital flows, becomes much more difficult.

This paper is a product of Macroeconomics 1, Africa Technical Families. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Manorama Rani, room J11-278, telephone 202-473-2057, fax 202-473-8179, Internet address mrani@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at hdinh@worldbank.org. (32 pages)

2214. Trade Policy and Market Access Issues for Developing Countries: Implications for the Millennium Round

Constantine Michalopoulos
(October 1999)

An analysis of developing countries' current trade policies and market access problems is used as a basis for recommending positions for these countries in the new round of multilateral negotiations under the World Trade Organization.

Michalopoulos analyzes 61 trade policy reviews prepared for the World Trade Organization (WTO) and its predecessor, GATT — reviews that document the progress developing countries have made in integration with the world trading system over the past decade. Based on an analysis of post–Uruguay Round tariff and nontariff barriers worldwide, he then recommends developing country positions on major issues in the new round of WTO trade negotiations.

His key conclusions and recommendations:

- *Agriculture.* Developing countries should support the Cairns Group in its push for greater liberalization of industrial countries' agricultural trade policies; the revised Food Aid Convention is not a substitute for but a complement to worldwide liberalization of agriculture.
- *Manufactures.* The existence of tariff peaks and escalation in industrial country markets and the limited bindings at relatively high levels of developing country tariffs on manufactures present opportunities for negotiations with good prospects for shared and balanced benefits.

The remaining nontariff barriers in industrial countries that affect manufactures are concentrated in textiles and clothing. Developing countries should ensure that industrial countries implement their commitments to liberalize this sector and impose no new nontariff barriers in this or other sectors under the guise of other rules or arrangements.

The remaining nontariff barriers in developing countries should be converted into tariffs and reduced over time as part of the negotiations.

- *Antidumping.* The increased use of antidumping measures by high- and middle-income developing countries in recent periods offers an opportunity for balanced negotiations to restrict their use. Reduced use of antidumping measures would increase efficiency and benefit consumers in all countries. But it is unclear whether a supportive climate for such negotiations exists in either industrial or developing countries.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to identify opportunities for developing countries in the WTO 2000 negotiations. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at cmichalopoulos@worldbank.org. (80 pages)

2215. Implementation of Uruguay Round Commitments: The Development Challenge

J. Michael Finger and Philip Schuler
(October 1999)

At the Uruguay Round, developing countries took on obligations not only to reduce trade barriers but also to undertake significant reforms of regulations and trade procedures. The Round did not, however, take into account the cost of implementing these reforms — a full year's development budget for many of the least developed countries — nor did it ask whether the money might be more productive in other development uses.

At the Uruguay Round, developing countries took on unprecedented obligations not only to reduce trade barriers but to implement significant reforms both of trade procedures (including import licensing procedures and customs valuation) and of many areas of regulation that establish the basic business environment in the domestic economy (including intellectual property law and technical, sanitary, and phytosanitary standards.

This will cost substantial amounts of money. World Bank project experience in areas covered by the agreements suggests that an entire year's development budget is at stake in many of the least developed countries.

Institutions in these areas are weak in developing countries, and would benefit from strengthening and reform. But Finger and Schuler's analysis indicates that the obligations reflect little awareness of development problems and little appreciation for the capacities of the least developed countries to carry out the functions that these reforms of regulations and trade procedures address.

The content of these obligations can be characterized as the advanced countries saying to the others, "Do it my way!"

Moreover, these developing countries had limited capacity to participate in the Uruguay Round negotiations, so the process has generated no sense of "ownership" of the reforms to which membership in the World Trade Organization obligates them. From their perspective, the implementation exercise has been imposed imperially, with little concern for what it will cost, how it will be carried out, or whether it will support their development efforts.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to support effective developing country participation in the WTO system. This research was supported by the global and regional trust fund component of the World Bank/Netherlands Partnership Program. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. Michael Finger may be contacted at jfinger@worldbank.org. (54 pages)

2216. Corruption and Trade Tariffs, or a Case for Uniform Tariffs

Roberta Gatti
(November 1999)

A highly diversified trade tariff menu may fuel bribe-taking behavior. Setting trade tariff rates at a uniform level limits public officials' ability to extract bribes from importers.

By explicitly accounting for the interaction between importers and corrupt customs officials, Gatti argues that setting trade tariff rates at a uniform level limits public officials' ability to extract bribes from importers.

If the government's main objective is to raise revenues at the minimum cost to welfare, optimally-set tariff rates will be inversely proportional to the elasticity of demand for imports. So they will generally differ across goods.

Such a menu of tariff rates endows customs officials with the opportunity to extract rent from importers. If officials have enough discretionary power, they might threaten to misclassify goods into more heavily taxed categories unless importers pay them a bribe. Because of the bribe, the effective tariff rate for the importing firm increases, so demand for the good decreases.

The resulting drop in import demand implies an efficiency loss as well as lower government revenues, compared with the optimal taxation benchmark without corruption.

A similar argument applies when customs officials offer to classify goods into low-tariff categories in exchange for a bribe.

Setting trade tariffs at a uniform level eliminates officials' opportunities to extract rents. Thus, when corruption is pervasive, a uniform tariff can deliver more government revenues and welfare than the optimally set (Ramsey) tariff benchmark.

The empirical evidence confirms that these considerations are relevant to policymaking, since a robust association between the standard deviation of trade tariffs — a measure of the diversification of tariff menus — and corruption emerges across countries.

This paper — a product of Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to study corruption. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Roberta Gatti, room MC3-353, telephone 202-473-8735, fax 202-522-3518, Internet address rgatti@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. (16 pages)

2217. Border, Border, Wide and Far, How We Wonder What You Are

David C. Parsley and Shang-Jin Wei
(November 1999)

Crossing national borders adds significantly to price dispersion. This study of prices in Japan and the United States finds that a substantial part of that border effect is attributable to distance, shipping costs, exchange rates, and relative variability in wages.

Parsley and Wei exploit three-dimensional panel data on prices for 27 traded goods, over 88 quarters, across 96 cities in Japan and the United States, to answer several questions:

- Does the average exchange rate between countries stray further from zero than that between cities within a country?
- Is there any tendency for the average exchange rate to move closer to zero over time?
- Does the border narrow over time?
- Is there evidence linking changes in the so-called border effect — the extra dispersion in prices between cities in different countries beyond what physical distance could explain — with plausible economic explanations, such as exchange rate variability?

The authors present evidence that the intranational real exchange rates are substantially less volatile than the comparable distribution of international relative prices.

They also show that an equally weighted average of commodity-level real exchange rates tracks the nominal exchange rate well, suggesting strong evidence of sticky prices.

Next they turn to economic explanations for the dynamics of the border effect.

Focusing on the dispersion of prices between city pairs, they confirm previous findings that crossing national borders adds significantly to price dispersion. Based on their point estimates, crossing the U.S.-Japan border is equivalent to adding between 2.5 and 13 million miles to the cross-country volatility of relative prices.

They infer that distance, exchange rates, shipping costs, and relative variability in wages influence the border effect. After those variables are controlled for, the border effect disappears.

This paper — a product of Public Economics, Development Research Group — is part of a larger effort in the group to understand international capital flows. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, Internet address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at david.parsley@owen.vanderbilt.edu or swei@worldbank.org. (31 pages)

2218. Who Avoids and Who Escapes from Poverty during the Transition? Evidence from Polish Panel Data, 1993–96

Wlodzimierz Okrasa
(November 1999)

There is a tendency toward chronic, long-term poverty in Poland. Most at risk: larger households, farm households, and households dependent on social welfare. Least at risk: households of employees or the self-employed, educated households, households headed by pensioners, households that are part of kinship networks, and households with liquid assets, durables, or access to financial resources. Among those who missed out on the benefits of the first phase of economic prosperity, children are overrepresented.

Okrasa uses four-year panel data from Poland's Household Budget Survey to explore the distinction between transitory and long-term poverty, a crucial distinction in designing and evaluating poverty reduction strategies.

Okrasa analyzes household welfare trajectories during the period 1993–96, to identify the long-term poor and to determine how relevant household asset endowments are as determinants of household poverty and vulnerability over time.

He concludes that the chronically poor constitute a distinct and separate segment of the population, with low turnover. Among specific observations about factors that affect Poland's long-term poverty:

- Variables in human capital significantly affected the pattern of repeated poverty and vulnerability. Larger households tended to experience poverty and vulnerability, mostly because they contained more children or other dependents. Households with elderly members and those headed by older people, by women rather than men, and by educated people of either gender were least likely to be poor. Poverty was unaffected by the presence of a disabled person in the household.
- Households with liquid assets or durables, or with access to financial resources, were less likely to be poor and vulnerable. Households appeared to take advantage of credit and loans to maintain their current level of consumption rather than to augment their stock of assets.
- Households that were part of kinship networks were less at risk of falling into chronic poverty or vulnerability.
- Households headed by pensioners were least in danger of impoverishment. Those most in danger were farm households (including "mixed" households headed by workers with an agricultural holding) and households heavily dependent on social welfare.
- Households of employees were better off than self-employed households when income-based measures of poverty were used but not when consumption-based measures were used. Neither group was significantly vulnerable.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to study the dynamics of poverty and the effectiveness of the safety net. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sheila Fallon, room MC3-558, telephone 202-473-8009, fax 202-522-1153, Internet address sfallon@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at wokrasa@worldbank.org. (52 pages)

2219. The Effect of the United States' Granting Most Favored Nation Status to Vietnam

Emiko Fukase and Will Martin
(November 1999)

If the United States grants Vietnam most favored nation status, both countries would benefit. Vietnamese exports to the United States would more than double, and Vietnam would gain substantial welfare benefits from improved market access and increased availability of imports. For the United States, lowering the current high tariffs against Vietnam would improve welfare by reducing costly diversion away from Vietnamese products.

Since the U.S. embargo on trade with Vietnam was lifted in 1994, exports from Vietnam to the United States have risen dramatically. However, Vietnam remains one of the few countries to which the United States has not yet granted most favored nation (MFN) status. The general tariff rates that the United States imposes average 35 percent compared with 4.9 percent for the MFN rate.

Granting MFN status to Vietnam would improve its terms of trade and help improve the efficiency of resource allocation in the country. Better access to the U.S. market would increase the volume of Vietnamese exports to the United States and the prices received for them while also reducing their costs to U.S. users.

Fukase and Martin use a computable general equilibrium model to examine the effects of reducing U.S. tariffs on Vietnamese imports from general rates to MFN rates. They estimate tariff changes using the U.S. tariff schedule for 1997 weighted by Vietnam's exports to the United States.

The results suggest that after a change to MFN status for Vietnam, its exports to the United States would more than double, from the 1996 baseline of $338 million to $768 million. By conservative estimates, welfare gains in Vietnam would be about $118 million a year, or a 0.9 percent increase in real income per capita. Sixty percent of that gain would come from improved terms of trade and the other 40 percent from gains in efficiency. Because Vietnam's exports to the United States have been growing rapidly since the lifting of the embargo in 1994, the trade expansion resulting from MFN status may be larger by the time Vietnam obtains it. Based on 1998 values, the increase in exports would have been around $750 million a year.

For the United States, lowering the high tariffs on imports from Vietnam would improve consumer welfare by lowering prices and increasing the volume of those imports. The direct welfare gains in the United States are estimated to be $56 million a year.

There are likely to be significant additional gains to both countries from the liberalization Vietnam will undertake as a result of the negotiations for MFN status and for entry into the World Trade Organization.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to understand the links between trade and development in transition economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at efukase@worldbank.org or wmartin1@worldbank.org. (26 pages)

2220. A Quantitative Evaluation of Vietnam's Accession to the ASEAN Free Trade Area

Emiko Fukase and Will Martin
(November 1999)

The static economic benefits of Vietnam's accession to the ASEAN Free Trade Area (AFTA) are likely to be relatively small. The gains from increased access to ASEAN markets would be small, and they would be offset by the costs of trade diversion on the import side. But binding commitments on protection rates under the AFTA plan could provide an important stepping stone to more beneficial broader liberalization.

Vietnam's accession to the ASEAN Free Trade Area (AFTA) has been an important step in its integration into the world economy. Fukase and Martin use a multiregion, multisector computable general equilibrium model to evaluate how different trade liberalization policies of Vietnam and its main trading partners affect Vietnam's welfare, taking into account the simultaneous impacts on trade, output, and industrial structure.

They conclude that:

- The static economywide effects of the AFTA liberalization to which Vietnam is currently committed are small. On the import side, the exclusion of a series of products from the AFTA commitments appears to limit the scope of trade creation, and the discriminatory nature of AFTA liberalization would divert Vietnam's trade from non-ASEAN members.
- Vietnam's small initial exports to ASEAN make the gains from improved access to partner markets relatively modest. Since Singapore dominates Vietnam's ASEAN exports and initial protection in Singapore is close to zero, there are few gains from preferred status in this market.
- When Vietnam extends its AFTA commitments to all of its trading partners on a most favored nation basis, its welfare increases substantially — partly because of the greater extent of liberalization, partly because the broader liberalization undoes the costly trade diversion created by the initial discriminatory liberalization, and finally because of the more efficient allocation of resources among Vietnam's industries.
- AFTA, APEC, and unilateral liberalizations affect Vietnam's industries in different ways. AFTA appears to benefit Vietnam's agriculture by improving its access to the ASEAN market.
- Broad unilateral liberalization beyond AFTA is likely to shift labor away from agriculture and certain import-competing activities toward relatively labor-intensive manufacturing. Reduced costs for intermediate inputs will benefit domestic production. These sectors conform to Vietnam's current comparative advantage, and undertaking broad unilateral liberalization now seems a promising way to facilitate the subsequent development of competitive firms in more capital- and skill-intensive sectors. By contrast, more intense import competition may lead some import substitution industries (now dependent on protection) to contract.
- The higher level of welfare resulting from more comprehensive liberalization implies that the sectoral protection currently given to capital-intensive and strategic industries is imposing substantial implicit taxes on the rest of the economy.
- All the above suggests that AFTA should be treated as an important initial step toward broader liberalization. Binding international commitments in AFTA and, in due course, at the World Trade Organization can provide a credible signal of Vietnam's commitment to open trade policies that will help stimulate the upgrading of existing firms and investment in efficient and dynamic firms.

This paper — a product of Trade, Development Research Group — was prepared as part of the AFTA Expansion Project in collaboration with the East Asia and Pacific Region. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada @worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at efukase@worldbank.org or wmartin1@worldbank.org. (61 pages)

2221. The Dynamics of Poverty and the Effectiveness of Poland's Safety Net (1993–96)

Wlodzimierz Okrasa
(November 1999)

Changes in Poland's family allowances and unemployment benefits have significant but different effects on different groups of households. In deciding on strategies to address long-term poverty, policymakers must take such differences into account.

Okrasa analyzes how the incidence of household endowments and the allocation of social benefits affect families' transitions into and out of poverty.

Using panel data for 1993–96 from Poland's Household Budget Survey, and a framework based on sample survival analysis techniques, Okrasa evaluates how various policies will affect households with specific characteristics that make them likely to become poor or to move out of poverty under different scenarios (including whether or not they receive a given amount of a particular type of social transfer).

He also discusses how nonincome sources of welfare, such as savings, credits, and loans, affect the likelihood that families will become or stop being poor.

He concludes that family allowances and unemployment benefits, the two major social programs analyzed, have significant but different effects on different groups of households (characterized in terms of the age, gender, marital status, and educational attainment of the head of household; the size, type, location, and sector of employment of the family or household; and the year in which the household fell into poverty).

If the share of family allowances in total household income were reduced by 1 percent, for example, the average length of poverty would be increased by roughly 2 percent. But a 1 percent change in unemployment benefits would yield a 3 percent change in the average duration of poverty. Differences in hazard rates for various subgroups would be even greater.

Households in villages were much more likely to fall into poverty than households in cities and large towns, but the poor in towns and cities had more difficulty exiting poverty.

There was generally less poverty mobility among households headed by public sector employees than among those headed by employees in the private sector.

Families with three or more children and one-parent families (and grandparents with children) faced the greatest risk of being poor; single-person households and childless married couples were the least endangered. Small nuclear families with one or two children and families without children fell between these two extremes.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to analyze the dynamics of poverty and the effectiveness of the safety net. The study was funded by the Bank's Research Support Budget under the research project "Household Welfare Change during the Transition" (RPO 681-21). Copies of this paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Sheila Fallon, room MC3-558, telephone 202-473-8009, fax 202-522-1153, email address sfallon@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at wokrasa@worldbank.org. (67 pages)

2222. Labor Market Integration in the Presence of Social Capital

Maurice Schiff
(November 1999)

Social capital raises productivity and falls with labor mobility. Because labor mobility generates a negative externality, integration of labor markets results in too much mobility, too low a level of social capital, and an ambiguous effect on welfare. Trade liberalization is superior to labor market integration because it reduces mobility and the negative externality associated with it.

Labor market integration is typically assumed to improve welfare in the absence of distortions, because it allows labor to move to where returns are highest.

Schiff examines this result in a simple general equilibrium model in the presence of a common property resource: social capital.

Drawing on evidence that social capital raises productivity and falls with labor mobility, Schiff's main findings are that:

- Labor market integration imposes a negative externality and need not raise welfare.
- The welfare impact is more beneficial (or less harmful) the greater the difference in endowments is between the integrating regions.
- Whether positive or negative, the welfare impact is larger the more similar the levels of social capital of the integrating regions are and the lower the migration costs are.
- Trade liberalization generates an additional benefit—over and above the standard gains from trade — by reducing labor mobility and the negative externality associated with it. Trade liberalization is superior to labor market integration.
- The creation of new private or public institutions in response to labor market integration may reduce welfare.

Schiff shows that the welfare implications depend on two parameters of the model, the curvature of the utility function and the cost of private migration.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to understand the link between market performance and welfare. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, Internet address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at mschiff@worldbank.org. (26 pages)

2223. Integrated Financial Supervision: Lessons from Northern European Experience

Michael Taylor and Alex Fleming
(November 1999)

In the past, financial supervision tended to be organized around specialist agencies for the banking, securities, and insurance sectors. In recent years, several countries have moved toward integrating these different supervisory functions in a single agency.

Drawing on Northern European experience — where three Scandinavian countries have practiced integrated supervision for the past 10 years — Taylor and Fleming address three policy-related issues associated with the integrated model:

- Under what conditions should (or should not) a country consider moving toward an integrated model of financial supervision?

Clearly, for a small transition or developing economy, or an economy with a small financial sector, the economies of scale from establishing an integrated agency outweigh the costs of moving to such a model. A strong case can also be made for an integrated approach in a financial sector dominated by banks, with little role for capital markets or a highly integrated financial sector.

- How should an integrated agency be structured, organized, and managed?

There is no single obviously correct organizational structure, and existing agencies are experimenting with a variety of forms. An institutionally based structure has the virtue of simplicity and can be implemented fairly quickly, but tends to preserve the cultures and identities of the predecessor agencies more than is optimal. Whatever the structure, integrated supervision requires active management to secure the potential benefits that the approach offers.

- How should the integration process be implemented?

While the decision to move to an integrated agency must be carefully thought through in the context of the country concerned, the more difficult part is implementation, which must be sensitively managed. Once the decision has been made, implementation should take place as quickly as possible. A well-conceived "change management" process should aim to overcome the cultural barriers associated with the previous fragmented structure.

Taylor and Fleming's review of Northern European experience with integration of financial supervision raises a range of questions relevant to developing and transition economies, which they discuss.

This paper — a product of the Private and Financial Sectors Development Unit, Europe and Central Asia Region — is part of a larger effort in the region to assist transition economies in strengthening the legal and regulatory framework for their financial sectors. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sylvia Torres, room H6-326, telephone 202-473-9012, fax 202-522-0005, Internet address storres@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at mtaylor@imf.org or afleming@worldbank.org. (35 pages)

2224. Growth Forecasts Using Time Series and Growth Models

Aart Kraay and George Monokroussos
(November 1999)

It is difficult to choose the "best" model for forecasting real per capita GDP for a particular country or group of countries. This study suggests potential gains from combining time series and growth-regression-based approaches to forecasting.

Kraay and Monokroussos consider two alternative methods of forecasting real per capita GDP at various horizons:

- Univariate time series models estimated country by country.
- Cross-country growth regressions.

They evaluate the out-of-sample forecasting performance of both approaches for a large sample of industrial and developing countries.

They find only modest differences between the two approaches. In almost all cases, differences in median (across countries) forecast performance are small relative to the large discrepancies between forecasts and actual outcomes.

Interestingly, the performance of both models is similar to that of forecasts generated by the World Bank's Unified Survey.

The results do not provide a compelling case for one approach over another, but they do indicate that there are potential gains from combining time series and growth-regression-based forecasting approaches.

This paper — a product of Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to improve the understanding of economic growth. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Rina Bonfield, room MC3-354, telephone 202-473-1248, fax 202-522-3518, email address abonfield @worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at akraay@worldbank.org or gmonokroussos@worldbank.org. (32 pages)

2225. How Did Highly Indebted Poor Countries Become Highly Indebted? Reviewing Two Decades of Debt Relief

William Easterly
(November 1999)

Theoretical models predict that countries with unchanged long-run savings preferences will respond to debt relief by running up new debts or by running down assets. And there are some signs that incremental debt relief over the past two decades has fulfilled those predictions. Debt relief is futile for countries with unchanged long-run savings preferences.

How did highly indebted poor countries become highly indebted after two decades of debt relief efforts?

A set of theoretical models predict that countries with unchanged long-run savings preferences will respond to debt relief with a mixture of asset decumulation and new borrowing.

A model also predicts that a high-discount-rate government will choose poor policies and impose its intertemporal preferences on the entire economy.

Reviewing the experience of highly indebted poor countries, compared with that of other developing countries, Easterly finds direct and indirect evidence of asset decumulation and new borrowing associated with debt relief. The ratio of the net present value of debt to exports rose strongly over 1979–97 despite the debt relief efforts.

Average policies in highly indebted poor countries were generally worse than those in other developing countries, controlling for income.

The trend for terms of trade was no different in highly indebted poor countries than in other developing countries, not were wars more likely in highly indebted poor countries.

Over time there has been an important shift in financing for highly indebted poor countries, away from private and bilateral nonconcessional sources to the International Development Association and other sources of multilateral concessional financing. But this implicit form of debt relief also failed to reduce debt in net present value terms.

Although debt relief is done in the name of the poor, the poor are worse off if debt relief creates incentives to delay reforms needed for growth.

This paper — a product of Macroeconomics and Growth, Development Research Group — is part of a larger effort in the group to study the effectiveness of aid for growth. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Kari Labrie, room MC3-456, telephone 202-473-1001, fax 202-522-3518, email address klabrie@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at weasterly @worldbank.org. (39 pages)

2226. Money, Politics, and a Future for the International Financial System

Michael Klein
(November 1999)

Three approaches to regulatory frameworks for financial systems — and a scenario for development of the world financial system that assumes a market solution.

In developing the architecture for a financial system, the challenge is to combine deregulation and safety nets against systemic failure with effective prudential regulation and oversight.

Klein analyzes three approaches to choosing an adequate regulatory framework for a financial system.

- Those most worried about panic and herd behavior tend to favor relatively extensive controls on financial institutions' activities, including controls on interest rates and on the volume and direction of lending.
- Those most concerned about moral hazard advocate abolishing controls and safety nets, seeing the solution in stronger market discipline and reduced powers and discretion for regulators.
- Mainstream opinion advocates a mix of measures, to both strengthen market discipline and improve regulatory oversight.

The approach a country opts for depends on (1) which monetary and exchange rate regime it chooses, (2) whether it is more concerned about moral hazard or about panic and herd behavior, and (3) how the politics of reform shape its solutions.

Klein suggests a scenario for development of the global financial system over the next two or three decades that assumes that the final outcome will resemble the market solution — not because that is the optimal policy choice but because of how political weaknesses will interact with advances in settlement technology.

In Klein's scenario, the world moves toward a monetary system in which fixed exchange rate systems or de facto currency competition limit the power of central banks. This limits options for discretionary and open-ended liquidity support to help deal with systemic financial crises.

The costs of inflexible exchange rates are moderated by new types of wage contracts, using units of account that are correlated with the shocks a particular industry or kind of contract faces — thus maintaining the positive aspects of monetary systems with flexible nominal exchange rates.

Mistrust in monetary authorities and the emergence of private settlement systems lead to a return of asset-backed money as the means of payment.

The disciplines on financial systems come to resemble somewhat those of historical "free banking" systems, with financial institutions requiring high levels of equity and payments systems protected only by limited, fully funded safety nets.

This paper — a product of Private Participation in Infrastructure, Private Sector Development Department — is part of a larger effort in the department to understand regulatory issues. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Mina Salehi, room I9-240, telephone 202-473-7157, fax 202-522-2029, email address msalehi@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at michael.u.klein@si.shell.com. (22 pages)

2227. The Sri Lankan Unemployment Problem Revisited

Martin Rama
(November 1999)

Unemployment in Sri Lanka is largely voluntary. The underlying problem is not a shortage of jobs but the artificial gap between good jobs and bad ones. Policy efforts should be aimed at reducing the gap between good and bad jobs by making product markets more competitive, reducing excessive job security, and reforming government policies on pay and employment.

Sri Lanka's high unemployment rate has been attributed to a mismatch of skills, to queuing for public sector jobs, and to stringent job security regulations. But the empirical evidence supporting these explanations is weak.

Rama takes a fresh look at the country's unemployment problem, using individual records from the 1995 Labor Force Survey and time series for wages in the economy's formal and informal sectors.

He assesses, and rejects, the skills mismatch hypothesis by comparing the impact of educational attainment on the actual wages of those who have a job with the effect on the lowest acceptable wages of the unemployed.

However, he finds substantial rents associated with jobs in the public sector and in private sector activities protected by high tariffs or covered by job security regulations.

A time-series analysis of the impact of unemployment on wage increases across sectors supports the hypothesis that most of the unemployed are waiting for "good" job openings but are not interested in readily available "bad" jobs.

In short, unemployment in Sri Lanka is largely voluntary. The problem is not a shortage of jobs but the artificial gap between good and bad jobs. Policy efforts should be aimed at reducing the gap between good and bad jobs by making product markets more competitive, by reducing excessive job security, and by reforming government policies on pay and employment.

This paper was written as part of a broader labor study undertaken by the Poverty Reduction and Economic Management Sector Unit, South Asia Region. The study was also supported by the Bank's Research Support Budget under the research project "The Impact of Labor Market Policies and Institutions on Economic Performance" (RPO 680-96). Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Sheila Fallon, room MC3-558, telephone 202-473-8009, fax 202-522-1153, email address sfallon @worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at mrama@worldbank.org. (46 pages)

2228. Fiscal Contingency Planning for Banking Crises

Patrick Honohan
(November 1999)

Estimating the likely fiscal costs of future banking crises requires information about the size and composition of the banks' balance sheets and expert assessments about the accuracy of the accounting data and about certain short-term risks.

There is constant demand for an estimate of the likely fiscal costs of future banking crises, but little precision can be expected in such an estimate. Honohan shows how information that is typically available to authorities could be used to get a general sense of the order of magnitude of the direct fiscal liability.

What is required for such an estimate?

• Information about the size and composition of the banks' balance sheets.

• Expert assessments of the accuracy of the accounting data and of specific short-term risks to which the components are known to be subject.

Honohan's method distinguishes between losses that have already crystallized and the changing risks for the immediate future.

By including contingency planning for banking collapse in their fiscal calculations, authorities may risk destabilizing expectations or worsening the moral hazard in the system. But the risks of contingency planning generally outweigh the risks of sending confused signals. Insisting on ignorance is a poor way to protect against announcement errors that trigger panic.

This paper — a product of Finance, Development Research Group — was produced for the Poverty Reduction and Economic Management Network thematic group studying the quality of fiscal adjustment. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Agnes Yaptenco, room MC3-446, telephone 202-473-8526, fax 202-522-1155, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at phonohan@worldbank.org. (33 pages)

2229. Do School Facilities Matter? The Case of the Peruvian Social Fund (FONCODES)

Christina Paxson and Norbert Schady
(November 1999)

Education projects of the Peruvian Social Fund (FONCODES) have reached poor districts and, to the extent they live in those districts, poor households. FONCODES has had a positive effect on school attendance rates for young children, but not on the likelihood that children will be at an appropriate school level for their age.

Since its creation in 1991, the Peruvian Social Fund (FONCODES) has spent about US$570 million funding microprojects throughout Peru. Many of these projects have involved building and renovating school facilities.

Paxson and Schady analyze the targeting and impact of FONCODES investments in the education sector, using data from FONCODES, Peru's 1993 population census, Peru's 1994 and 1995 Living Standards Measurement Surveys, and a 1996 household survey conducted by the Peruvian Statistical Institute.

They present their results based on various descriptive and econometric techniques, including nonparametric regressions, differences-in-differences, and instrumental variables estimators.

They show that FONCODES projects in the education sector have reached poor districts and, to the extent they live in those districts, poor households. FONCODES has had a positive effect on school attendance rates for young children, but not on the likelihood that children will be at an appropriate school level for their age.

Among other recommendations, they suggest that FONCODES consider random assignment of some education projects for a subsample of the population, to test the robustness of the study's assumptions and results.

Lack of disaggregated data on such measures as the time children spend in school, pupil-teacher ratios, and scholastic achievement precluded analysis of the impact of FONCODES education projects on school quality. Collecting such data, and understanding how improvements in school infrastructure interact with other school-level changes to produce more learning, should be a research priority.

This paper — a product of the Poverty Division, Poverty Reduction and Economic Management Network — is part of a larger effort in the network to understand the functioning and impact of social funds. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Norbert Schady, room MC8-138, telephone 202-458-8247, fax 202-522-1557, email address nschady@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. (34 pages)

2230. Bankruptcy Reorganization through Markets: Auction-based Creditor Ordering by Reducing Debts (ACCORD)

Donald B. Hausch and S. Ramachandran
(November 1999)

Financial reorganization under bankruptcy reduces a firm's debts to serviceable levels through negotiations overseen by courts. Academics have suggested using markets for such negotiations, giving equity holders and junior claimants call options to buy the firm back from senior creditors.

Hausch and Ramachandran further develop such a market-based approach for situations in which claimants are severely cash-constrained and there is good reason for existing owner-managers to remain in control.

Under the ACCORD scheme — **A**uction-based **C**reditor **Or**dering by **R**educing **D**ebts — creditors remain creditors but form a queue, to be serviced in sequence from the firm's operating cash flows.

Creditors bid for their position in this queue. Those accepting greater *proportionate* reductions in the face value of their claims (perhaps most pessimistic about the firm's prospects) are placed ahead of the others.

A preexisting hierarchy of claims is honored by having claimants bid for their positions within the relevant segment of the queue. No one in the queue, including owners (who are last), is paid anything until the (reduced) debts of the first in line are *fully* discharged. The queue then moves up and the next claimant in line is serviced.

Deferred creditors, who must wait their turn for the firm's operating cash surpluses, are not junior creditors in the conventional sense.

Hausch and Ramachandran determine equilibrium bidding strategies, showing that the firm's aggregate debts would be reduced to a more serviceable level. This would improve the incentives of the firm's owner-managers, who remain in control, to operate the firm efficiently. Economic resources would thus be better used, and losses already incurred would be efficiently and quickly allocated among creditors.

Hausch and Ramachandran suggest that ACCORD would be appropriate for East Asia, where, despite new bankruptcy laws, inexperienced courts are unlikely to nudge creditors into a quick negotiated agreement nor to be able to cope with systemic bankruptcy. Moreover, when the government is a major unsatisfied creditor, whose agents may not act in the taxpayers' best interests, market-based solutions might remove political interference from restructuring decisions. Neither owners nor creditors would be worse off than they are now.

This paper — a joint product of the Private Sector Development Department, and Poverty Reduction and Economic Management Sector Unit, East Asia and Pacific Region — is part of a larger effort in the region to understand and improve corporate restructuring and governance. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Lili Tsang, room MC8-140, telephone 202-458-0516, fax 202-522-1784, email address ltsang@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at dhausch@bus.wisc.edu or sramachandran@worldbank.org. (35 pages)

2231. What's Behind Mercosur's Common External Tariff?

Marcelo Olarreaga, Isidro Soloaga, and Alan Winters
(November 1999)

Most researchers focus on the political economy (interest group pressures) approach to analyzing why customs unions are formed, but terms-of-trade effects were also important in formation of the Common Market of the Southern Cone (Mercosur). Terms-of-trade externalities among Mercosur's members have been internalized in the common external tariff.

The theoretical literature on trade follows two different approaches to explaining the endogenous formation of customs unions:

(1) *The terms-of-trade approach*, in which integrating partners are willing to exploit terms-of-trade effects. Using the terms-of-trade approach, one concludes that tariffs on imports from the rest of the world should increase after the formation of a regional bloc, because the market power of the region increases and terms-of-trade externalities can be internalized in the custom union's common external tariff. As the union forms, the "domestic market" gets larger and members' international market power increases.

(2) *The interest group pressures (political economy) approach*, in which, for example, the customs union may offer the potential for exchanging markets or protection within the enlarged market. Using this approach, one would usually conclude that tariffs for the rest of the world decline after the custom union's formation — a rationale related to free-rider effects in larger lobbying groups.

It is important to recognize the forces behind the formation of customs unions. Most researchers have focused on the second approach and neglected terms of trade as a possible explanatory variable. Both rationales explain a significant share of tariff information.

Results, write Olarreaga, Soloaga, and Winters, suggest that both forces were important in formation of the Common Market of the Southern Cone (Mercosur).

Terms-of-trade effects account for between 6 percent and 28 percent of the explained variation in the structure of protection. There is also evidence that the terms-of-trade externalities among Mercosur's members have been internalized in the common external tariff.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to understand the political economy of trade protection. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-5555, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. Marcelo Olarreaga may be contacted at molarreaga@worldbank.org. (41 pages)

2232. Market Access Advances and Retreats: The Uruguay Round and Beyond

J. Michael Finger
and Ludger Schuknecht
(November 1999)

Uruguay Round negotiations on market access were a success. Tariff cuts covered a larger share of world trade than those of the Kennedy or Tokyo Rounds and will save importers some $50 billion a year.

In the Uruguay Round negotiations, trade distorting agricultural policies were taken up substantively for the first time in any round of multilateral trade negotiations. Voluntary export restraints outside the Multifibre Arrangement (MFA) were in fact eliminated.

Developing countries became equal partners with developed countries. Their tariff cuts covered as large a share of imports as those of the developed countries and were deeper. Because developing country tariffs were higher to start with, their cuts will save importers more (per dollar of imports covered) than will cuts by developed countries. Tariff bindings for most developing countries, although often above applied rates, were extended to 90 percent or more of imports.

Few countries agreed to give foreigners *unlimited* market access in services, or full national treatment in more than a few service activities. But developed countries agreed to *some* liberalization of cross-border provision for 70 percent of service activities (compared with 25 percent in developing countries).

Less positively, although trade restrictions on agricultural products were converted to tariffs, border protection was reduced less on agricultural than on industrial products, and there was little agreement on reducing trade-affecting subsidies.

The textiles and clothing agreement binds developed countries to eliminate all MFA-sanctioned restrictions but allows them to largely put off doing so until 2005. Concessions to which developing countries agreed are due now. Reciprocal concessions of particular interest are either due in the future (elimination of the MFA) or yet to be negotiated (liberalization of agricultural trade).

Also disquieting, since the Uruguay Round, developing countries have undertaken antidumping cases at a rate (per dollar of imports) three times higher than that for the United States — mostly against other developing countries.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to assess the amount of liberalization which resulted from the Uruguay Round. The research was supported by the Global and Regional Trust Fund component of the World Bank/Netherlands Partnership Program. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. Michael Finger may be contacted at jfinger@worldbank.org. (69 pages)

2233. User's Guide to an Early Warning System for Macroeconomic Vulnerability in Latin American Countries

Santiago Herrera and Conrado Garcia
(November 1999)

Models for an early warning system do a good job predicting vulnerability to macroeconomic crises in several Latin American countries.

Herrera and Garcia develop an early warning system for macroeconomic vulnerability for several Latin American countries, drawing on the work of Kaminsky, Lizondo, and Reinhart (1997) and Kaminsky (1988).

They build a composite leading indicator that signals macroeconomic vulnerability, showing that, historically, crises tend to happen in certain "vulnerable" situations.

Interested mainly in providing an operational tool, Herrera and Garcia use a different approach to the problem than Kaminsky did. First, they use fewer variables to generate the signals. Then, after the variables are aggregated, a signal is issued, depending on the behavior of the composite index. (Kaminsky's procedure was to generate signals with each variable and then aggregate them.)

Their results are satisfactory both statistically and operationally.

Statistically, Type I and Type II errors are smaller than those reported in previous papers.

Operationally, this system of leading indicators is less costly to maintain, given fewer variables — which are widely available and reported with timeliness.

Herrera and Garcia tested the models' out-of-sample predictive ability on crises that occurred after the first stage of their project was finished: Colombia (September 1998), Brazil (January 1999), and Ecuador (February 1999). In all cases the models correctly anticipated the speculative attacks.

Moreover, Mexico's models, estimated with information available two years before the 1994 crisis, show that these signaling devices would have been useful for signaling the macroeconomic vulnerability before December 1994.

This paper — a product of the Economic Policy Sector Unit, Latin America and the Caribbean Region — is part of a larger effort in the region to build tools that policymakers can use to prevent crises. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Conrado Garcia, room I8-146, telephone 202-458-7969, fax 202-522-2119, email address cgarciacorado@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. Santiago Herrera may be contacted at sherrera @worldbank.org. (17 pages)

2234. The Green Revolution and the Productivity Paradox: Evidence from the Indian Punjab

Rinku Murgai
(November 1999)

In assessing new technologies, policymakers should allow time between the adoption of the technologies and the realization of productivity gains attributable to them. Productivity growth was much lower than might be expected during the green revolution in the Indian Punjab but improved as learning processes took effect and resource management and the use of inputs became more efficient.

Murgai provides district-level estimates of the contribution of technical change to agricultural output growth in the Indian Punjab from 1960 to 1993.

Contrary to widespread belief, productivity growth in the Punjab was surprisingly low during the green revolution (in the mid-1960s), when modern hybrid seed varieties were being adopted. It improved later, after adoption of the new varieties was essentially complete.

Murgai proposes three reasons for this pattern:

- The standard measure of total factor productivity overstates the contribution of capital to output growth at the expense of the productivity residual. High-yielding varieties introduced in the 1960s helped spur output growth by making crops responsive to water and fertilizer, which not only allowed but indeed encouraged far greater use of capital inputs. This increase in the elasticity of the output response to capital inputs is incorporated into the index of factor accumulation and therefore excluded from the measure of total factor productivity growth. As a result, the contribution of technical change to growth in Punjab's agriculture during the green revolution is probably underestimated.
- The overstatement of the capital contribution during the green revolution is exacerbated by indivisibilities in capital inputs.
- Productivity growth did not come from the adoption of modern varieties alone. Improved resource management and public investment in infrastructure also helped improve productivity.

This paper — a product of Rural Development, Development Research Group — is part of a larger effort in the group to study the determinants and impact of technology adoption and productivity growth in agriculture. The study was funded by the Bank's Research Support Budget under the research project "Productivity and Sustainability of Irrigated Systems in South Asia" (RPO 680-34). Copies of this paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Maria Fernandez, room MC3-508, telephone 202-473-3766, fax 202-522-1151, email address mfernandez2@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at rmurgai @worldbank.org. (25 pages)

2235. Beyond Capital Ideals: Restoring Banking Stability

Gerard Caprio Jr. and Patrick Honohan
(November 1999)

Hard on the heels of Mexico's crisis in 1994, a wave of financial crises swept across emerging economies — from East Asia and Russia to Brazil — bringing the fragility of banking and finance into unprecedented focus. What has gone wrong?

Caprio and Honohan examine why emerging markets, in particular, are susceptible to and affected by financial difficulties. They show that these difficulties have a richer, more complex structure than they are sometimes believed to have — with marked information asymmetries and substantial volatility. The sources of heightened regulatory failure in emerging markets in recent years include the volatility of real and nominal shocks, the difficulty of operating in uncharted territory after financial liberalization and other changes in regime, and the political pressures that can inhibit the enforcement of prudential regulation.

Caprio and Honohan discuss what stronger regulation can and cannot accomplish, as well as options to improve the incentive structure for bankers, regulators, and other market participants. They probe the shortcomings of a regulatory paradigm that relies mainly on supervised capital adequacy and discuss the possible intermittent application of supplementary "blunt instruments" as an interim solution while longer-term reforms are being put in place.

Certain well-worn messages remain valid, but are respected more in theory than in practice. There would be fewer problems, the authors say, if there were:

- More diversification.
- More balanced financial structures (for example, as between debt and equity).
- More foreign banks in emerging markets' financial systems.
- Better enforcement of both contracts and regulations.

Participants in the financial sector will constantly try to get around rules that limit their profitability, so regulation must be seen as an evolutionary struggle. Prevention of financial failure is not costless, and a heavy repressive hand is not warranted. But a richer regulatory palette can be used to protect financial systems more successfully against crisis while preserving the systems' growth-enhancing effectiveness.

This paper is a joint product of Finance, Development Research Group, and the Financial Sector Practice Department. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Agnes Yaptenco, room MC3-446, telephone 202-473-8526, fax 202-522-1155, email address ayaptenco@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at gcaprio@worldbank.org or phonohan@worldbank.org. (40 pages)

2236. Valuing Water for Chinese Industries: A Marginal Productivity Assessment

Hua Wang and Somik Lall
(November 1999)

The marginal productivity of water used for industry varies among sectors in

China, but there is great potential for the Chinese government to save water by raising water prices to industry, to encourage water conservation.

Using plant-level data on more than 1,000 Chinese industrial plants, Wang and Lall estimate a production function treating capital, labor, water, and raw material as inputs to industrial production. They then estimate the marginal productivity of water based on the estimated production function.

Using the marginal productivity approach to valuing water for industrial use, they also derive a model and estimates for the price elasticity of water use by Chinese industries. Previous studies used water demand functions and total cost functions to estimate firms' willingness to pay for water use.

They find that the marginal productivity of water varies among sectors in China, with an industry average of 2.5 yuan per cubic meter of water.

The average price elasticity of industrial water demand is about −1.0, suggesting a great potential for the Chinese government to use pricing policies to encourage water conservation in the industrial sector. Increasing water prices would reduce water use substantially.

This paper — a product of Infrastructure and Environment, Development Research Group — is part of a larger effort in the group to understand the economics of industrial pollution control in developing countries. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Roula Yazigi, room MC2-533, telephone 202-473-7176, fax 202-522-3230, email address ryazigi@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at hwang1@worldbank.org or slall1@worldbank.org. (23 pages)

2237. Reforming Tax Systems: The World Bank Record in the 1990s

Luca Barbone, Arindam Das-Gupta, Luc De Wulf, and Anna Hansson
(November 1999)

In efforts to reform the administration of tax systems, the World Bank can substantially improve project design, execution, and effectiveness by adopting a more concerted approach to institutional analysis.

The main constraint on World Bank operations in tax and customs administration is the Bank's inadequate institutional framework for accumulating knowledge from loan operations, concludes this review of the Bank's record on reform of tax systems in the 1990s.

The Bank's theoretical basis for reforming tax and customs administration is still rudimentary. Recent theories stress the importance of institutions that harness voice and improve transparency and contestability, but there is little evidence that reform of these factors alone makes tax administration more effective.

Improvements are needed in pre-project diagnosis and project design, especially for examining accountability, administration costs, managerial autonomy, performance incentives for staff, taxpayer equity and services, and environmental factors. Pre-project work could draw more systematically on lessons from previous experience.

Institutional components of project design have been biased toward organization, manpower upgrading, and procedures related to information technology. Too little attention has been paid to improving accountability, administrative cost-effectiveness, and anticorruption institution-building.

Projects have made inadequate use of different kinds of performance indicators, with little uniformity in those applied.

Methods used to evaluate project outcomes could be better and more uniform.

Suggestions for future Bank operations:

- Doing better background work and articulating a strategy and comprehensive framework for Bank involvement in reform of tax administration.
- Possibly supporting and strengthening regional tax administration associations, which could serve as catalysts for change.
- Strengthening partnering and supporting private sector consultant organizations, so they can manage major components of administrative reform.
- Institutionalizing the accumulation of knowledge about tax administration (which might require changing staff recruitment, the mix of staff skills, and training plans).

The authors provide recommendations for improving project diagnosis, design, performance indicators, and appraisal, as well as a short list of projects that serve as guides to good practice.

This paper — a product of the Public Sector Management Division, Poverty Reduction and Economic Management Network — is part of a larger effort in the network to draw on lessons of past Bank activity in order to pursue professional excellence and maximum client impact. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Luca Barbone, room J7-119, telephone 202-473-2556, fax 202-473-8466, email address lbarbone@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The other authors may be contacted at oldmonk87@yahoo.com, ldewulf@worldbank.org, or ahansson1@worldbank.org. (35 pages)

2238. A Review of the Role and Impact of Export Processing Zones

Dorsati Madani
(November 1999)

As instruments for encouraging economic development, export processing zones have only limited usefulness. A better policy choice is general liberalization of a country's economy.

Traditional export processing zones are fenced-in industrial estates specializing in manufacturing for exports. Modern ones have more flexible rules, such as permitting more liberal domestic sales. They provide a free-trade and liberal regulatory environment for the firms involved. Their primary goals: to provide foreign exchange earnings by promoting nontraditional exports, to provide jobs and create income, and to attract foreign direct investment and attendant technology transfer and knowledge spillover.

Domestic, international, or joint venture firms operating in export processing zones typically benefit from reduced red tape, flexible labor laws, generous long-term tax holidays and concessions, above-average communications services and infrastructure (and often subsidized utilities and rental rates), and unlimited duty-free imports of raw and intermediate inputs and capital goods needed for production.

In this review of experience, Madani concludes that export processing zones have limited applications; the better policy choice is to liberalize a country's entire economy. Under certain conditions — including appropriate setup and good management — export processing zones can play a dynamic role in a country's development, but only as a transitional step in an integrated movement toward general liberalization of the economy (with revisions as national economic conditions change).

The World Bank, writes Madani, should be cautious about supporting export processing zone projects, doing so only on a case-by-case basis, only with expert guidance, and only as part of a general reform package. It should not support isolated export processing zone projects in unreformed or postreform economies (in the last case they might encourage backsliding on trade policy).

In general, if a policy is good for the economy as a whole, it is likely to be good for an export processing zone. Sound policy will encourage:

- Sound, stable monetary and fiscal policies, clear private property and investment laws, and a business-friendly economic environment.
- Moderate, simplified (but not "overfriendly") corporate tax schedules, and generally liberal tariffs and other trade taxes.
- Private development and management of export processing zones and their infrastructure and unsubsidized utilities.
- Labor laws that are business-friendly but do not abuse workers' safety and labor rights.
- A better understanding of the impact of industrial refuse on the quality of air, soil, water, and human health.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to understand the impact of trade policy and trade policy tools on development. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada @worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at dmadani@worldbank.org. (107 pages)

2239. The EU Factor in the Trade Policies of Central European Countries

Bartlomiej Kaminski
(November 1999)

Despite strong protectionist sentiments, trade regimes have remained open in Central European countries invited to negotiate their accession to the European Union. Regional disciplines (the EU factor), combined with the legacy of low tariffs under GATT commitments, appear to have offset domestic protectionist impulses.

Kaminski examines the development of foreign trade institutions and policies in Central European countries invited to negotiate their accession to the European Union.

With the dismantling of state trading, conditions of market access have been dramatically liberalized. However, except for Estonia and, to a lesser extent, the Czech Republic, most Central European countries have followed a policy of bilateral rather than multilateral trade liberalization.

The fall in tariff rates on preferential imports has prompted a search for nontariff barriers, but these countries' trade regimes have remained open — which is surprising, considering the strong protectionist sentiments in economic administration.

Regional disciplines (the EU factor), combined with the legacy of low tariffs under GATT commitments, appear to have been responsible for this openness. Foreign trade policy has been shaped by tensions between domestic protectionist impulses and pressures from the European Union (and other World Trade Organization members) to improve conditions of market access.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to examine trade and integration issues. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada @worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at bkaminski@worldbank.org. (31 pages)

2240. The Effects of Land Registration on Financial Development and Economic Growth: A Theoretical and Conceptual Framework

Frank F. K. Byamugisha
(November 1999)

A theoretical framework to guide empirical analysis of how land registration affects financial development and economic growth.

Byamugisha develops a theoretical framework to guide empirical analysis of how land registration affects financial development and economic growth.

Most conceptual approaches investigate the effects of land registration on only one sector, but land registration is commonly observed to affect not only other sectors but the economy as a whole.

Byamugisha builds on the well-tested link between secure land ownership and farm productivity, adding to the framework theory about positive information and transaction costs. To map the relationship between land registration and financial development and economic growth, the framework links:

- Land tenure security and investment incentives.
- Land title, collateral, and credit.
- Land markets, transactions, and efficiency.
- Labor mobility and efficiency.
- Land liquidity, deposit mobilization, and investment.

Empirical results from applying the framework to a single case study — of Thailand, described in a separate paper — suggest that the framework is sound.

This paper — a product of the Rural Development and Natural Resources Sector Unit, East Asia and Pacific Region — is part of a larger effort in the region to increase the effectiveness of country assistance strategies in the area of property rights and economic development. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Elisabeth Gelos, room MC9-344, telephone 202-473-7846, fax 202-477-2733, email address egelos@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at fbyamugisha@worldbank.org. (15 pages)

2241. How Land Registration Affects Financial Development and Economic Growth in Thailand

Frank F.K. Byamugish
(November 1999)

Land registration in Thailand has significant positive long-run effects on financial development and economic growth.

Using an economywide conceptual framework, Byamugisha analyzes how land registration affects financial development and economic growth in Thailand.

He uses contemporary techniques, such as error correction and cointegration, to deal with such problems as time-series data not being stationary. He also uses the autoregressive distributed lag model to analyze long lags in output response to changes in land registration.

His key findings:

- Land titling has significant positive long-run effects on financial development.
- Economic growth responds to land titling following a J curve, by first registering a fall and recovering gradually, thereafter to post a long, strong rally.
- The quality of land registration services, as measured by public spending on land registration, has strongly positive and significant long-run effects on economic growth.

This paper — a product of the Rural Development and Natural Resources Sector Unit, East Asia and Pacific Region — is part of a larger effort in the region to increase the effectiveness of country assistance strategies in the area of property rights and economic development. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Elisabeth Gelos, room MC9-344, telephone 202-473-7846, fax 202-477-2733, email address egelos@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at fbyamugisha@worldbank.org. (32 pages)

2242. Confronting Competition Investment Response and Constraints in Uganda

Ritva Reinikka and Jakob Svensson
(November 1999)

While macroeconomic reforms are necessary, firms' investment response is likely to remain limited without an accompanying improvement in public sector performance.

Investment rates in Uganda are similar to others in Africa — averaging slightly more than 10 percent annually, with a median value of just under 1 percent. But the country's profit rates are considerably lower.

These results are consistent with the view that Ugandan firms display more confidence in the economy than their counterparts in other African countries. Thus, for given profit rates, Ugandan firms invest more. At the same time, increased competition (because of economic liberalization) has exerted pressure on firms to cut costs. Many of those costs are not under the firms' control, however, so their profits have suffered.

Using firm-level data, Reinikka and Svensson identify and quantify a number of cost factors, including those associated with transport, corruption, and utility services. Several factors — including crime, erratic infrastructure services, and arbitrary tax administration — not only increase firms' operating costs but affect their perceptions of the risks of investing in (partly) irreversible capital.

The empirical analysis suggests that firms — especially small firms — are liquidity-constrained in the sense that they invest only when sufficient internal funds are available. But given the firms' profit-capital ratio, it is hard to argue that the liquidity constraint is binding in most cases, even though the cost of capital is perceived as a problem.

This paper — a joint product of Macroeconomics 2, Africa Region, and Public Economics and Macroeconomics and Growth, Development Research Group — is part of a larger effort in the Bank to study economic policy, public service delivery, and growth. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at rreinikka@worldbank.org or jsvensson@worldbank.org. (33 pages)

2243. Designing Pro-Poor Water and Sewer Concessions: Early Lessons from Bolivia

Kristin Komives
(November 1999)

To design pro-poor concession arrangements in the water sector, policymakers must pay careful attention to how the proposed contract, and existing or proposed regulations, will affect private concessionaires' ability, obligations, and financial incentives to serve low-income households.

The Bolivian government awarded a concession for water and sewer services in La Paz and El Alto in 1997. One goal of doing so was to expand in-house water and sewer service to low-income households.

Komives uses the Aguas del Illimani case to explore how the design of typical concession agreements (with monopoly private service suppliers) can affect outcomes in poor neighborhoods.

She finds that outcomes in services can be affected by the concession contracts, by the contract bid process, by sector regulations, and by regulatory arrangements. To increase the likelihood of improvements in low-income areas, policymakers should:

- Make contract objectives clear and easily measurable.
- Eliminate policy barriers to serving the poor (including property title requirements and service boundaries that exclude poor neighborhoods).
- Design financial incentives consistent with service expansion or improved objectives for low-income areas.

Contracts are subject to negotiation, so expansion or connection mandates alone do not guarantee that concessionaires will serve poor areas. Provisions and standards that reduce service options (for example, requirements that eliminate all alternatives to in-house connections) or restrict the emergence of new service providers (for example, granting exclusivity in the service area) could do more harm than good.

In two years of operation, Aguas del Illimani met its first expansion mandate and took many steps to facilitate the expansion of in-house water connections in low-income areas. The company and the Bolivian water regulator were willing to discuss and seek possible solutions to problems associated with servicing poor neighborhoods.

It is too early to tell whether these gains will be sustainable or to predict how privatization will ultimately affect poor households in La Paz and El Alto.

This paper — a product of Private Participation in Infrastructure, Private Sector Development Department — is part of a larger effort in the department to analyze and disseminate the principles of, and good practice for, improving service options for the poor through reforms for private participation in infrastructure. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Mina Salehi, room I9-240, telephone 202-473-7157, fax 202-522-2029, email address msalehi@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at komives@email.unc.edu. (32 pages)

2244. True World Income Distribution, 1988 and 1993: First Calculations, Based on Household Surveys Alone

Branko Milanovic
(November 1999)

Inequality in world income is very high, according to household surveys, more because of differences between mean country incomes than because of inequality within countries. World inequality increased between 1988 and 1993, driven by slower growth in rural per capita incomes in populous Asian countries (Bangladesh, China, and India) than in large, rich OECD countries, and by increasing income differences between urban China on the one hand and rural China and rural India on the other.

Milanovic derives the distribution of individuals' income or expenditures for two years, 1988 and 1993. His is the first paper to calculate world distribution for individuals based entirely on data from household surveys. The data, from 91 countries, are adjusted for differences in purchasing power parity between the countries.

Measured by the Gini index, inequality increased from an already high 63 in 1988 to 66 in 1993. This increase was driven more by rising differences in mean incomes between countries than by rising inequalities within countries.

Contributing most to the inequality were rising urban-rural differences in China and the slower growth of rural purchasing-power-adjusted incomes in South Asia than in several large developed market economies.

This paper — a product of Poverty and Human Resources, Development Research Group — is part of a larger effort in the group to study inequality and poverty in the world. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Patricia Sader, room MC3-556, telephone 202-473-3902, fax 202-522-1153, email address psader@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at bmilanovic@worldbank.org. (65 pages)

2245. Opportunities for Improving Environmental Compliance in Mexico

Susmita Dasgupta
(November 1999)

One of the main reasons for noncompliant firms' poor environmental performance is the information gap on Mexico's environmental policy. Pollution control could be improved through systematically fuller communication targeted to noncompliant firms — including more environmental education, especially of senior managers.

Survey evidence from Mexico reveals large observed differences in pollution from factories in the same industry, or the same area, or operating under the same regulatory regime. Many factories have adopted significant measures for pollution control and are in compliance with environmental regulations, but some have made little or no such effort.

For lack of data, systematic research on the reasons behind such variations in plant-level environmental performance (especially on how impediments to pollution control affect plant behavior) is rare, even in industrial societies.

Drawing on a recent plant-level survey of Mexican factories, Dasgupta identifies a number of performance variables characteristic of compliant and noncompliant plants, as well as factors that noncompliant plants perceive to be obstacles to pollution control.

Noncompliant firms made less effort than compliant firms to change materials used, to change production processes, or to install end-of-pipe treatment equipment. They had significantly fewer programs to train their general workers in environmental responsibilities. They lagged behind in environmental training, waste management, and transportation training. They received less technical training, especially about the environment, environmental policy and administration, and clean technology and audits.

Responses about obstacles to better environmental performance included scarcity of training resources, government bureaucracy, high interest rates, and Mexico's lack of an environmental protection culture. Respondents said that senior managers did not emphasize the environment, assigned more priority to economic considerations, and were not trained in the subject. There were too few suitable programs, training was not recognized, and workers were not interested in the subject. Most important, however, little information was available about Mexico's environmental policy.

These findings suggest the importance of technical assistance — especially training and information.

In Mexico, the information gap on policy is a major problem. Mexican environmental agencies should invest more in technical assistance and environmental training targeted to noncompliant enterprises. Environmental education, especially of senior managers, could significantly improve pollution control.

Maintaining close contact with noncompliant firms, designing programs targeted to them, and pursuing them systemically should increase their responsiveness to regulations.

This paper — a product of Infrastructure and Environment, Development Research Group — is part of a larger effort in the group to understand the determinants of environmental performance in developing countries. The study was funded by the Bank's Research Support Budget under the research project "The

Economics of Industrial Pollution Control in Developing Countries" (RPO 680-20). Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Yasmin D'Souza, room MC2-622, telephone 202-473-1449, fax 202-522-3230, email address ydsouza@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at sdasgupta@worldbank.org. (16 pages)

2246. Infrastructure's Contribution to Aggregate Output

David Canning
(November 1999)

Of the major kinds of physical infrastructure, electricity generating capacity has roughly the same marginal productivity as physical capital as a whole. So have roads-plus-rail, globally and in lower-income countries. Telephones, however, and transport routes in higher-income countries, have higher marginal productivity than other kinds of capital.

Using panel data for a cross-section of countries, Canning estimates an aggregate production function that includes infrastructure capital. He finds that:

- The productivity of physical and human capital is close to the levels suggested by microeconomic evidence on their private returns.
- Electricity generating capacity and transportation networks have roughly the same marginal productivity as capital as a whole.
- Telephone networks appear to show higher marginal productivity than other types of capital.

Panel data cointegration methods used in estimation take account of the nonstationary nature of the data, are robust to reverse causation, and allow for different levels of productivity and different short-run business-cycle and multiplier relationships across countries.

This paper — a product of Public Economics, Development Research Group — is part of a larger effort in the group to study the impact of public expenditures. The study was funded by the Bank's Research Support Budget under the research project "Infrastructure and Growth: A Multicountry Panel Study" (RPO 680-89). Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at d.canning@qub.ac.uk. (14 pages)

2247. Does Deposit Insurance Increase Banking System Stability? An Empirical Investigation

Asli Demirgüç-Kunt and Enrica Detragiache
(November 1999)

Explicit deposit insurance tends to be detrimental to bank stability — the more so where bank interest rates are deregulated and the institutional environment is weak.

Based on evidence for 61 countries in 1980–97, Demirgüç-Kunt and Detragiache find that explicit deposit insurance tends to be detrimental to bank stability, the more so where bank interest rates are deregulated and the institutional environment is weak.

The adverse impact of deposit insurance on bank stability tends to be stronger the more extensive is the coverage offered to depositors, and where the scheme is funded and run by the government rather than the private sector.

This paper — a product of Finance, Development Research Group — is part of a larger effort in the group to study deposit insurance. The study was funded by the Bank's Research Support Budget under the research project "Deposit Insurance: Issues of Principle, Design, and Implementation" (RPO 682-90). Copies of this paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Kari Labrie, room MC3-456, telephone 202-473-1001, fax 202-522-1155, email address klabrie@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at ademirguckunt@worldbank.org or edetragiache@imf.org. (37 pages)

2248. Privatization and Regulation of Transport Infrastructure in the 1990s: Successes . . . and Bugs to Fix for the Next Millennium

Antonio Estache
(November 1999)

Learning to regulate fairly, effectively, and at arm's length may be the main challenge governments face in attracting private investment and financing to the transport sector.

Governments should increasingly be able to rely on the private sector for help supporting (and financing) the transport sector — especially infrastructure support services for which there is heavy demand — but first they must improve their regulatory tools and sort out the institutional mess surrounding the regulatory process. Some countries have put together creative restructuring models and financing designs that tap potential in the private sector.

Roads will continue to need significant public funding, but there are innovative ways (including shadow tolls) to attract private financing for road maintenance and investment.

Partnerships between the public and private sectors have remained largely untapped at ports and airports.

To attract more private capital to the sector, regulators must know the cost of capital, know how to be fair to captive shippers, and have a better handle on demand — so they have more credibility when conflicts arise.

Governments have overemphasized making deals and have generally underestimated the difficulty of taking on their new job as regulators. They are increasingly switching to contract-based regulation, to firm up the commitments of all parties involved, but are not adequately emphasizing contract design that anticipates problems and addresses unpredictable situations. This increases the risk of arbitrary regulatory rulings, which increases regulatory and political risks, which raises the expected rate of return required by potential investors. And all that makes future projects costlier or more difficult, adding to the effects of the 1998–99 financial crisis.

As a result of increased risk, the two groups most interested in the sector are:

- Large, strong operators in the sector — typically in tandem with local construction companies — that feel confident they can take on regulators in case of conflict.

- Risk-takers carving a niche for themselves.

Either way, taxpayers and transport users are exposed to government, regulator, or operator failures that result in contract renegotiations (the norm, rather than the exception, in transport infrastructure projects).

Gains from privatization might not reach consumers, simply because governments are ignoring the importance of ensuring fair distribution of long-run gains through the early creation of independent and accountable regulatory institutions that work closely with effective competition agencies.

This paper — a product of Governance, Regulation, and Finance, World Bank Institute — is part of a larger effort in the institute to increase understanding of infrastructure regulation. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Gabriela Chenet-Smith, room J3-282, telephone 202-473-6370, fax 202-334-8350, email address gchenet@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at aestache@worldbank.org. (36 pages)

2249. Argentina's Transport Privatization and Re-Regulation: Ups and Downs of a Daring Decade-Long Experience

Antonio Estache, José C. Carbajo, and Ginés de Rus
(November 1999)

Argentina's policy for reform of the transport sector has been a mix of competition in the market and, through concessions, for the market. Capacity has increased, demand has grown, and prices and services have improved. Public financing has not been eliminated but it has been drastically reduced.

When Argentina initiated reform of its transport sector in 1989, it had few models to follow. It was the first Latin American country to privatize its intercity railroad, to explicitly organize intraport competition, and to grant a private concession to operate its subway. It was second (after Japan) to privatize its urban commuter railways and one of the first in the developing world to grant road concessions to private operators.

Argentina's experience shows that transport privatization and deregulation provide efficiency gains that can be delivered to users. Despite unexpectedly high residual subsidy requirements, fiscal costs are lower, services have improved, and new investment is taking place.

Argentina's decade-long experience shows that the reform process involves learning by doing. Inexperienced new regulators quickly face the challenges in controlling monopoly power and providing long-run incentives for private investment. Designing sustainable reform requires a commitment by government to minimize its role in the sector and to respect its original promises to both users and concessionaires.

Argentina has learned the importance of building up the regulatory capacity needed to monitor contracts, especially when initial uncertainty about demand and cost conditions is strong and renegotiation is the probable outcome of daring reform.

The government's main challenge in monitoring contracts is to get enough information to reach a balance in its decisions about distributing efficiency gains fairly between consumers and private investors. This is one area in which Argentina may not yet have met the challenge. As the last wave of contract extensions in rail and roads comes to an end, one issue is likely to be the need for better targeting of subsidies for the poor.

This paper — a product of Governance, Regulation, and Finance, World Bank Institute — is part of a larger effort in the institute to increase understanding of infrastructure regulation. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Gabriela Chenet-Smith, room J3-282, telephone 202-473-6370, fax 202-334-8350, email address gchenet@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. Antonio Estache may be contacted at aestache@worldbank.org. (23 pages)

2250. Universal Service Obligations in Utility Concession Contracts and the Needs of the Poor in Argentina's Privatizations

Omar Chisari and Antonio Estache
(November 1999)

The structural changes that come with privatization may induce a reconsideration of the regulations defined during the early stages of privatization.

Chisari and Estache summarize the main lessons emerging from Argentina's experience, including universal service obligations in concession contracts. They discuss free-riding risks, moral hazard problems, and other issues that arise when social concerns are delegated to private operators.

After reporting on Argentina's experience, Chisari and Estache suggest some guidelines:

- Anticipate interjurisdictional externalities. Users' mobility makes targeting service obligations difficult.
- Minimize the risks imposed by elusive demand. In providing new services, a gradual policy may work better than a "shock."
- Realize that unemployment leads to delinquency and lower expected tariffs. Elasticity of fixed and usage charges is important.
- Deal with the fact that the poor have limited access to credit. Ultimately, plans that included credit for the payment of infrastructure charges were not that successful.
- Coordinate regulatory, employment, and social policy. One successful plan to provide universal service involved employing workers from poor families in infrastructure extension works.
- Beware of the latent opportunism of users who benefit from special programs. Special treatment of a sector may encourage free-riding (for example, pensioners overused the telephone until a limit was placed on the number of subsidized phone calls they could make).
- Fixed allocations for payment of services do not ensure that universal service obligations will be met. How do you deal with the problem that many pensioners do not pay their bills?
- Anticipate that operators will have more information than regulators do. If companies exaggerate supply costs in remote areas, direct interaction with poor

users there may lead to the selection of more cost-effective technologies.

- "Tailored" programs are often much more effective than standardized programs. They are clearly more expensive but, when demand-driven, are also more effective.

This paper — a product of Governance, Regulation, and Finance, World Bank Institute — is part of a larger effort in the institute to increase understanding of infrastructure regulation. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Gabriela Chenet-Smith, room J3-282, telephone 202-473-6370, fax 202-334-8350, email address gchenet@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at ochisari@uade.edu or aestache@worldbank.org. (27 pages)

2251. Will the Euro Create a Bonanza for Africa?

Daniel Cohen, Nicolai Kristensen, and Dorte Verner

At this stage, it is difficult to conclude that the euro will have substantial macroeconomic impact on sub-Saharan Africa, unless launch of the euro becomes the tool of a major policy shift, such as the "euroization" of the continent — which is currently unlikely.

In considering how the euro will affect Sub-Saharan Africa, Cohen, Kristensen, and Verner examine the transmission channels through which the euro could affect economies in the region. They examine the risks and opportunities the euro presents for Sub-Saharan African countries.

They especially examine the effects from the trade channel, through changes in European economic activity and the real exchange rate. Because of the relatively low income elasticity for primary commodities — which is what Sub-Saharan Africa mainly exports — an increase in activity in Europe is considered to have a marginal impact on Africa.

Exchange rate regimes and geographical trade patterns point to large differences in exposure to changes in the real exchange rate.

Capital flows to Sub-Saharan Africa can be affected through portfolio shifts or through changes in foreign direct investment.

Changes in competitiveness in Europe are not expected to influence foreign direct investment, so the euro is not expected to affect foreign direct investment significantly.

Portfolio diversification could increase greatly. But Sub-Saharan Africa is not expected to realize the increased potential from portfolio diversification because of its severely underdeveloped domestic capital markets. It is vitally important that Sub-Saharan African countries strengthen their financial integration into global markets.

How the euro will affect such parts of the financial system as banks and debt and reserve management varies across countries. Generally the effect is expected to be limited.

This paper — a product of Poverty Reduction and Economic Management Sector Unit, Latin America and the Caribbean Region — is part of a larger effort in the Bank to study the effect of the euro on developing countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hazel Vargas, room I8-138, telephone 202-473-7871, fax 202-522-2119, email address hvargas @worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at nkristensen@worldbank.org or dverner@worldbank.org. (23 pages)

2252. Productivity Growth, Capital Accumulation, and the Banking Sector: Some Lessons from Malaysia

Ejaz Ghani and Vivek Suri
(December 1999)

How did the East Asian miracle turn into one of the worst financial crises of the century? A case study of Malaysia provides some answers.

How did the East Asian miracle turn into one of the worst financial crises of the century? Ghani and Suri address the question using Malaysia as a case study.

Many discussions of the East Asian crisis address proximate and short-run causes of the crisis, such as the current account deficit, exchange rate misalignment, and disproportionate short-run external debt relative to foreign exchange reserves. These indicators of vulnerability are themselves endogenous outcomes of deeper institutional features.

Ghani and Suri argue that some long-term features of the development strategy that helped sustain high growth in the first place also contributed to the economy's increasing vulnerability. High output growth was driven by rapid growth in capital stock, for example. The banking sector played a critical role in transforming (and accelerating the transformation of) large savings into capital accumulation. But the banking sector may not have been allocating capital efficiently.

Ghani and Suri find that the rapid growth in bank lending in Malaysia is negatively associated with total factor productivity growth. On the other hand, the economy's other structural strengths, such as openness to foreign direct investment and technology, helped improve productivity growth.

Malaysia's exceptional growth record over the past quarter century was driven largely by the growth in physical capital stock. Total factor productivity growth may have slowed in the late 1990s, and sustaining high output growth will require greater emphasis on productivity improvements.

Policies that encouraged the flow of foreign direct investment and better access to imported capital goods contributed to productivity growth. But rapid growth in bank lending relative to GDP may have slowed it.

How policymakers can best slow the growth of credit is a question that remains unanswered.

This paper — a product of the Poverty Reduction and Economic Management Sector Unit, East Asia and Pacific Region — is part of a larger effort in the region to better understand past and future sources of growth. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Nancy Mensah, room MC8-134, telephone 202-458-0546, fax 202-522-1557, email address nmensah @worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at eghani@worldbank.org or vsuri @worldbank.org. (23 pages)

2253. Revenue Recycling and the Welfare Effects of Road Pricing

Ian W. H. Parry and Antonio Miguel R. Bento
(December 1999)

The presence of preexisting tax distortions, and the form of revenue recycling, can crucially affect the size — and possibly even the sign — of the welfare effect of road pricing schemes. The efficiency gains from recycling congestion tax revenues in other tax reductions can amount to several times the Pigouvian welfare gains from congestion reduction.

Parry and Bento explore the interactions between taxes on work-related traffic congestion and preexisting distortionary taxes in the labor market.

A congestion tax raises the overall costs of commuting to work and discourages labor force participation at the margin when revenues are returned in lump-sum transfers. The resulting efficiency loss in the labor market can be larger than the Pigouvian efficiency gains from internalizing the congestion externality.

By contrast, if congestion tax revenues are used to reduce labor taxes, the net impact on the labor supply is positive and the efficiency gain in the labor market can raise the overall welfare gains of the congestion tax by as much as 100 percent.

Recycling congestion tax revenues in public transit subsidies produces a positive, but smaller, impact on the labor supply.

In short, Parry and Bento's results indicate that the presence of preexisting tax distortions, and the form of revenue recycling, can crucially affect the size — and possibly even the sign — of the welfare effect of road pricing schemes. The efficiency gains from recycling congestion tax revenues in other tax reductions can amount to several times the Pigouvian welfare gains from congestion reduction.

This paper — a product of Infrastructure and Environment, Development Research Group — is part of a larger effort in the group to study the cost-effectiveness of alternative transport policies. The study was funded by the Bank's Research Support Budget under the research project "The Cost-Effectiveness of Alternative Transport Policies" (RPO 683-39). Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Roula Yazigi, room MC2-533, telephone 202-473-7176, fax 202-522-3230, email address ryazigi@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at parry@rff.org or abento@worldbank.org. (30 pages)

2254.Does "Grease Money" Speed Up the Wheels of Commerce?

Daniel Kaufmann and Shang-Jin Wei
(December 1999)

Is it true that fighting corruption can improve economic efficiency and that fighting bribery can be productive? Not according to this study.

If bureaucratic burden and delay are exogenous, a firm may find bribes a helpful way to cut through red tape.

According to the "efficient grease" hypothesis, corruption can improve economic efficiency and fighting bribery can be counterproductive.

This need not be the case.

In a general equilibrium in which regulatory burden and delay can be endogenously chosen by rent-seeking bureaucrats, the effective (not just nominal) red tape and bribery may be positively correlated across firms.

Using data from three worldwide firm-level surveys, Kaufmann and Wei examine the relationship between bribe payments, management time wasted with bureaucrats, and cost of capital. They find that firms that pay more in bribes are also likely to spend more, not less, management time with bureaucrats, negotiating regulations. They also face a higher, not lower, cost of capital.

This paper — a joint product of Public Economics, Development Research Group, and Governance, Regulation, and Finance, World Bank Institute — is part of a larger effort in the Bank to understand the effects of corruption on economic development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Hedy Sladovich, room MC2-609, telephone 202-473-7698, fax 202-522-1154, email address hsladovich@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at dkaufmann@worldbank.org or swei@worldbank.org. (17 pages)

2255. Risk and Efficiency in East Asian Banks

Luc Laeven
(December 1999)

Banks restructured after East Asia's crisis of 1997 — most of them family-owned or company-owned and almost never foreign-owned — tended to be heavy risk takers. Most of them had excessive credit growth.

Laeven uses a linear programming technique (data envelopment analysis) to estimate the inefficiencies of banks in Indonesia, the Republic of Korea, Malaysia, the Philippines, and Thailand. He applies this technique to the precrisis period 1992–96.

Assessing a bank's overall performance requires assessing both efficiency and risk factors, so Laeven also introduces a measure of risk taking. This risk measure helps predict which banks were restructured after the crisis of 1997.

Laeven finds that foreign-owned banks took little risk relative to other banks in East Asia, and that family-owned and company-owned banks were among the highest risk takers.

Banks restructured after the 1997 crisis had excessive credit growth, were mostly family-owned or company-owned, and were almost never foreign-owned.

This paper — a product of the Financial Sector Strategy and Policy Department — is part of a larger effort in the department to study the causes and resolution of financial distress. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC9-624, telephone 202-473-3722, fax 202-522-2031, email address hvo1@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The author may be contacted at llaeven@worldbank.org. (33 pages)

2256. Geographical Disadvantage: A Heckscher-Ohlin–von Thunen Model of International Specialization

Anthony J. Venables and Nuno Limão
(December 1999)

What effect does distance have on costs for economies at different locations? Exports and imports of final and intermediate goods bear transport costs that increase with distance. Production and trade depend on factor endowments and factor intensities as well as on distance and the transport intensities of different goods.

The combination of distance, poor infrastructure, and being landlocked by neighbors with poor infrastructure can make transport costs many times higher for some developing countries than for most others.

Drawing on two traditions of economic modeling — Heckscher-Ohlin trade theory and von Thunen's work on the "isolated state" — Venables and Limão analyze the trade and production patterns of countries located at varying distances from an economic center.

Predicting a country's production and trade pattern requires knowledge of the country's location, its factor endowment, and the factor intensities and transport intensities of goods.

Venables and Limão define transport intensity and show how location and transport intensity should be combined with factor abundance and factor intensity in determining trade flows. A theory based on only one set of those variables, such as factor abundance, will systematically make incorrect predictions.

They report that geography and endowments interact in such a way that the world divides up into economic zones with different trade patterns.

Countries close to the economic center may specialize in transport-intensive activities; countries further out become diversified, producing and sometimes trading more goods; countries still further out may become import-substituting (replacing some of their imports from the center with local production); in the extreme, regions become autarchic. More remote locations have lower real incomes.

Globalization changes the terms of trade, improving the welfare of regions further out from economic centers, though reducing the welfare of closer regions.

Where will a new activity, such as assembly of a new product, locate? Remote locations are disadvantaged if the product has high transport intensity (perhaps because of heavy requirements for intermediate inputs). But the costs of remoteness are already incorporated into the factor prices of those regions, which makes them more attractive. Which location is chosen depends, therefore, on how existing activities compare with the new activity in transport intensity and factor intensity.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to study the location of economic activity. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at avenables@worldbank.org or ngl4@columbia.edu. December 1999. (29 pages)

2257. Infrastructure, Geographical Disadvantage, and Transport Costs

Nuno Limão and Anthony J. Venables
(December 1999)

The median landlocked country has only 30 percent of the trade volume of the median coastal economy. Halving transport costs increases that trade volume by a factor of five. Improving the standard of infrastructure from that of the bottom quarter of countries to that of the median country increases trade by 50 percent. Improving infrastructure in Sub-Saharan Africa is especially important for increasing African trade.

Limão and Venables use three different data sets to investigate how transport depends on geography and infrastructure. Landlocked countries have high transport costs, which can be substantially reduced by improving the quality of their infrastructure and that of transit countries.

Analysis of bilateral trade data confirms the importance of infrastructure. Limão and Venables estimate the elasticity of trade flows with regard to transport costs to be high, at about –2.5. This means that:

- The median landlocked country has only 30 percent of the trade volume of the median coastal economy.
- Halving transport costs increases the volume of trade by a factor of five.
- Improving infrastructure from the 75th to the 50th percentile increases trade by 50 percent.

Using their results and a basic gravity model to study Sub-Saharan African trade, both internally and with the rest of the world, Limão and Venables find that infrastructure problems largely explain the relatively low levels of African trade.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to investigate the effects of geography on economic performance. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at ngl4@columbia.edu or avenables@worldbank.org. (39 pages)

2258. Market Access Bargaining in the Uruguay Round: Rigid or Relaxed Reciprocity?

J. Michael Finger, Ulrich Reincke, and Adriana Castro
(December 1999)

The Uruguay Round tariff negotiations did not achieve a country-by-country balancing of concessions given and concessions received. How governments bargained was determined less by their national interests than by the interests of their politically important industrial constituencies.

How tightly are trade negotiators held to winning a dollar of concession for each dollar of concession granted? The outcome of the Uruguay Round tariff negotiations suggests that such constraints were not tight.

None of the delegations interviewed by Finger, Reincke, and Castro had tried to calculate for themselves the extent of concessions *received*. And the surplus or deficit of concessions received (over concessions given) varied widely among countries.

Measuring the "percentage point dollar" of concessions given and received (a "percentage point dollar" being a reduction of the tariff by one percentage point on $1 of imports, or by trading partners on exports), they found that the outcome of negotiations varied enormously from one country to another.

For 13 of 27 countries, *net concessions* (positive or negative) were at least 75 percent of the size of concessions received.

Negotiations were widely perceived to involve "equal sacrifice for the common good," with all countries expected to cut tariffs on the same percentage of imports.

Ability to pay was also a consideration: a smaller fraction of imports was liberalized for developing countries.

The authors found a tendency toward equality (in percentage of imports affected) across participating countries' concessions, particularly when developing countries' *unilateral liberalization* was considered — including the part of it that was not bound at the Uruguay Round.

Delegations emphasized how important it was for them to look after the interests of politically important sectors (including rice for Japan and the Republic of Korea and textiles for the United States and the European Union).

This paper is a product of Trade, Development Research Group. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. Michael Finger may be contacted at jfinger@worldbank.org. (22 pages)

2259. Predicting Currency Fluctuations and Crises: Do Resident Firms Have an Informational Advantage?

Daniel Kaufmann, Gil Mehrez, and Sergio Schmukler
(December 1999)

Markets have had limited success predicting crises and might do better by drawing on private information available to resident enterprise managers, who seem to know better than markets about future movements in exchange rates.

Kaufmann, Mehrez, and Schmukler investigate whether resident enterprise managers have an informational advantage about the countries in which they work. They propose a method for extracting information available to resident managers but unknown to investors and forecasters.

They test their hypothesis of informational advantage using a unique data set, the Global Competitiveness Survey. The survey asks local managers about their outlook for the country in which they reside.

They find that local managers do have useful private information. Local managers' responses improve on conventional forecasts of future volatility and changes in the exchange rate, which are based on economic fundamentals or interest rate differentials.

They find that the local business community perceived in advance the recent crises in the Republic of Korea, Russia, and Thailand, but not those in Indonesia and Malaysia.

Markets have had limited success predicting crises and might do better by drawing on private information available to resident enterprise managers, who seem to know better than markets about future movements in exchange rates.

This paper — a product of Governance, Regulation, and Finance, World Bank Institute — is part of a larger effort in the institute to understand the roles of transparency and governance. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Emily Khine, room MC3-341, telephone 202-473-7471, fax 202-522-3518, email address kkhine@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at dkaufmann@worldbank.org, mehrezg@gunet.georgetown.edu, or sschmukler@worldbank.org. (34 pages)

2260. Regional Integration Agreements: A Force for Convergence or Divergence?

Anthony J. Venables
(December 1999)

Developing countries may be better served by "north-south" than by "south-south" free trade agreements. Free trade agreements between low-income countries tend to lead to divergence in member country incomes, while agreements between high-income countries tend to lead to convergence.

Venables examines how benefits — and costs — of a free trade area are divided among member countries.

Outcomes depend on the member countries' comparative advantage, relative to one another and to the rest of the world.

Venables finds that free trade agreements between low-income countries tend to lead to divergence in member country incomes, while agreements between high-income countries tend to lead to convergence.

Changes induced by comparative advantage may be amplified by the effects of agglomeration.

The results suggest that developing countries may be better served by "north-south" than by "south-south" free trade agreements, because "north-south" agreements increase their prospects for convergence with high-income members of the free trade area.

In "north-south" free trade agreements, additional forces are likely to operate. The agreement may be used, for example, as a commitment mechanism to lock in economic reforms (as happened in Mexico with the North American Free Trade Agreement and in Eastern European countries with the European Union). A free trade agreement may also — through its effect on trade and through foreign direct investment — promote technology transfer to lower-income members.

This paper — a product of Trade, Development Research Group — is part of a larger effort in the group to study the effects of regional integration. Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Lili Tabada, room MC3-333, telephone 202-473-6896, fax 202-522-1159, email address ltabada@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research workingpapers. The author may be contacted at avenables@worldbank.org. (26 pages)

2261. Is Knowledge Shared within Households?

Kaushik Basu, Ambar Narayan, and Martin Ravallion
(December 1999)

Yes — and more efficiently by women than by men, according to this analysis of house-

hold survey data for Bangladesh. An illiterate adult earns significantly more in the nonfarm economy when living in a household with at least one literate member.

According to theory, a member of a collective-action household may or may not share knowledge with others in that household. Shared income gains from shared knowledge may well be offset by a shift in the balance of power within the family. But do literate members of the household share the benefits of literacy with other members of the household in practice?

Using household survey data for Bangladesh, Basu, Narayan, and Ravallion find that education has strong external effects on individual earnings.

When a range of personal attributes is held constant, an illiterate adult earns significantly more in the nonfarm economy when living in a household with at least one literate member. That is, a literate person is likely to share some of the benefits of his or her literacy with other members of the household. It is better to be an illiterate in a household where someone is literate than in a household of illiterates only.

It is widely noted that a literate mother confers greater benefits on her children than a literate father does. But what about differences between male and female recipients of knowledge? The empirical results suggest that women are more efficient recipients, too.

This paper — a joint product of the Office of the Senior Vice President and Chief Economist, Development Economics, and Poverty and Human Resources, Development Research Group — is part of a larger effort in the Bank to understand the relationship between literacy and balance of power in the household. This paper was funded by the Bank's Research Support Budget under the research project "Intrahousehold Decisionmaking, Literacy, and Child Labor" (RPO 683-07). Copies of the paper are available free from the World Bank, 1818 H Street, NW, Washington, DC 20433. Please contact Michelle Mason, room MC4-322, telephone 202-473-0809, fax 202-522-1158, email address mmason1@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. The authors may be contacted at kb40@cornell.edu, anarayan@worldbank.org, or mravallion@worldbank.org. (26 pages)